



Boone County Purchasing
613 E. Ash Street, Room 110
Columbia, MO 65201

REQUEST FOR BID (RFB)

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Bid Data

Bid Number: **51-17DEC18**
Commodity Title: **Assembly and Erection for Radio Tower in Hallsville,
Missouri**

DIRECT ANY BID FORMAT OR SUBMISSION QUESTIONS TO PURCHASING DEPT.

Bid Submission Address and Deadline

Day/Date: Monday, December 17, 2018
Time: 1:00 p.m. (Bids received after this time will be returned unopened)
Location/Mail Address: Boone County Purchasing Department
Boone County Annex Building
613 E. Ash, Room 110
Columbia, MO 65201
Directions: Annex Building is located at corner of 7th & Ash St.

Bid Opening

Day/Date: Monday, December 17, 2018
Time: 1:00 p.m., Central Time
Location/Address: Boone County Purchasing Department
Conference Room
613 E. Ash
Columbia, MO 65201

Bid Contents

1.0: Introduction and General Conditions of Bidding
2.0: Primary Specifications
3.0: Response Presentation and Review
4.0: Response Form
Attachments: Statement of Bidder's Qualifications
Standard Terms and Conditions
Instructions for House Bill 1549
Work Authorization Certification
Individual Bidder Affidavits
Debarment Form
Anti-Collusion Statement

Bid Contents, continued

Signature & Identify of Bidder
Bidder's Acknowledgement
Affidavit of Compliance with OSHA
"No Bid" Response Form

1. Introduction and General Conditions of Bidding

1.1. INVITATION – The County of Boone, through its Purchasing Department, invites responses, which offer to provide the goods and/or services identified on the title page, and described in greater detail in Section 2.

1.2. DEFINITIONS

County – This term refers to the County of Boone, a duly organized public entity. It may also be used as a pronoun for various subsets of the County organization, including, as the context will indicate:

Purchasing – The Purchasing Department, including its Purchasing Director and staff.

Department/s or Office/s – The County Department/s or Office/s for which this Bid is prepared, and which will be the end user/s of the goods and/or services sought.

Designee – The County employee/s assigned as your primary contact/s for interaction regarding Contract performance.

Bidder / Contractor / Supplier – These terms refer generally to businesses having some sort of relations to or with us. The term may apply differently to different classes of entities, as the context will indicate.

Bidder – Any business entity submitting a response to this Bid. Suppliers, which may be invited to respond, or which express interest in this bid, but which do not submit a response, have no obligations with respect to the bid requirements.

Contractor – The Bidder whose response to this bid is found by Purchasing to meet the best interests of the County. The Contractor will be selected for award and will enter into a Contract for provision of the goods and/or services described in the Bid.

Supplier – All business/entities which may provide the subject goods and/or services.

Bid – This entire document, including attachments. A Bid may be used to solicit various kinds of information. The kind of information this Bid seeks is indicated by the title appearing at the top of the first page. A “Request for Bid” is used when the need is well defined. A “Request for Proposal” is used when the County will consider solutions, which may vary significantly from each other or from the County’s initial expectations.

Response – The written, sealed document submitted according to the Bid instructions.

1.3. BID CLARIFICATION – Questions regarding this Bid should be directed in writing, preferably by e-mail, to the Purchasing Department. Answers, citing the question asked but not identifying the questioner, will be distributed simultaneously to all known prospective Bidders. Note: written requirements in the Bid or its Addenda are binding, but any oral communications between County and Bidder are not.

1.4. Bidder Responsibility – The Bidder is expected to be thoroughly familiar with all specifications and requirements of this Bid. Bidder’s failure or omission to examine any relevant form, article, site or document will not relieve them from any obligation regarding this Bid. By submitting a Response, Bidder is presumed to concur with all terms, conditions and specifications of this Bid.

1.5. Bid Addendum – If it becomes evident that this Bid must be amended, the Purchasing Department will issue a formal written Addendum to all known prospective Bidders. If necessary, a new due date will be established.

1.6. AWARD – Award will be made to the Bidder/s whose offer/s provide the greatest value to the County from the standpoint of suitability to purpose, quality, service, previous experience, price, lifecycle cost, ability to deliver, or for any other reason deemed by Purchasing to be in the best interest of the County. Thus, the result will not be determined by price alone. The County will be seeking the least costly outcome that meets the County needs as interpreted by the County.

1.7. CONTRACT EXECUTION – This Bid and the Contractor’s Response will be made part of any resultant Contract and will be incorporated in the Contract as set forth, verbatim.

Precedence – In the event of contradictions or conflicts between the provisions of the documents comprising this Contract, they will be resolved by giving precedence in the following order:

- 1) the provisions of the Contract (as it may be amended);
- 2) the provisions of the Bid;
- 3) the provisions of the Bidder's Response.

1.8. COMPLIANCE WITH STANDARD TERMS AND CONDITIONS – Bidder agrees to be bound by the County's standard "boilerplate" terms and conditions for Contracts, a sample of which is attached to this Bid.

2. Primary Specifications

ITEMS TO BE PROVIDED

1.0 GENERAL:

1.01 Contractor shall provide all materials, machinery, equipment and services to completely assemble and erect a radio tower in accordance with these specifications and all applicable EIA and manufacturer-recommended specifications.

1.02 Contractor shall work with Owner and tower manufacturer, Sabre Industries, to coordinate delivery and shall unload and stage tower steel near erection site. The tower is a 180' model S3R-SD structure.

1.03 Owner will secure necessary FAA, FCC and local zoning clearances and authority.

1.04 Contractor shall be responsible for obtaining all required work permits.

1.05 Owner will furnish gravel access up to the actual tower erection site. There will be adequate access for tower material delivery trucks, construction transport trucks, and a mobile crane.

1.06 Owner does not have electrical service at site. Contractor shall be responsible for providing any electrical power needed for tower assembly and erection.

1.07 All parts, materials, supplies and services shall meet the minimum construction and erection standards recommended by the tower manufacturer.

1.08 Contractor shall utilize materials furnished by tower manufacturer. Any other materials, fastenings or supplies proposed for use on the project shall receive approval from Owner prior to installation.

1.09 All antennas and coaxial cables will be provided and installed under separate bid except where noted.

1.10 On a daily basis, Contractor shall leave the site clear of construction debris, excess material or unused supplies or equipment including cans, crates, boxes, plastic bags, bolt cartons or any rubbish resulting from the work. All surplus or excess materials and supplies provided by tower manufacturer shall remain at site.

1.11 Contractor will have free access to the tower site. Owner will provide list of project contact people for Contractor's use. Contractor shall provide list of all on-site employees to Owner.

1.12 After completion, tower will be jointly inspected by the Contractor and Owner's representative. All required corrections shall be made prior to any submittal of claim for payment.

1.13 Detailed installation diagrams and documents shall be provided by Owner to Contractor. Following completion of the tower erection, all documents shall be returned to Owner.

1.14 Erection shall be accomplished using provided nuts, bolts, and fasteners with no field welding, cutting, or drilling required or allowed.

1.15 Any damage to the galvanizing shall be touched up with Z.R.C. Cold Galvanizing Compound or approved equivalent.

1.16 Contractor shall be limited to work occurring between 7:00 a.m. and 7:00 p.m. local time.

2.00 TOWER COMPONENTS:

2.01 Refer to attached design and erection drawings for the details of the tower.

2.02 The tower is a three-leg, lattice type self-supporting structure comprised of solid rod legs and standing 180' above base mounting level.

2.03 A nominal 14' face platform will be mounted at the top of structural tower steel.

2.04 Three waveguide ladders will be mounted on the tower as shown in the drawings.

2.05 One climbing ladder with safety-climb device will be mounted as shown in the drawings.

2.06 Three microwave dish mounts will be mounted at each of 150', 160', and 170' elevations.

2.07 Three 6' sidearm antenna brackets will be mounted at each of 90' and 125' elevations.

3.00 BID ATTACHMENTS:

3.01 All attachments shall be considered a part of this specification.

3.02 Attachments include:

- Electronic copy of detailed erection drawings as furnished by Sabre Industries
- Electronic copy of general site layout

4.00 SUBMITTALS

4.01 In addition to other information, Bidder shall submit qualifications to include:

4.01.a Complete contact information for four (4) Vendor's customers who were directly involved with Vendor during erection of similar sized and similar style tower structures.

4.01.b List of principal crew members and their experience who will work on this project.

5.00 Debarment and Suspension: By submission of its Bid Response, Vendor agrees to comply with the provisions of Executive Order 12549, regarding Debarment and Suspension. Specifically, the Vendor certifies that neither he/she nor their principals are 1.) presently debarred, suspended, proposed for debarment, declared ineligible or voluntary excluded from covered transactions by a Federal department or agency, 2) have not with a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain or performing a public transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property; 3.) are not presently indicted for or otherwise criminal or civilly charged by a government entity with commission of any of the offenses stated above and 4.) have not within a three year period preceding this bid had one or more public transactions terminated for cause or default.

6.00 Certification of Non-Resident/Foreign Contractors: If the Contractor is a foreign corporation or nonresident Contractor, it is agreed that the Contractor shall procure and maintain during the life of this contract:

- A. A certificate of authority to transact business in the State of Missouri from the Secretary of State, unless exempt pursuant to the provisions of Section 351.572 RSMo.
- B. A certificate from the Missouri Director of Revenue evidencing compliance with transient employer financial assurance law, unless exempt pursuant to the provisions of Section 285.230 RSMo.

7.00 Insurance Requirements - The Contractor shall not commence work under this contract until they have obtained all insurance required under this paragraph and the Certificate of Insurance has been approved by the County, nor shall the Contractor allow any subcontractor to commence work on their subcontract until all similar insurance required of subcontractor has been so obtained and approved. All policies shall be in amounts, form and companies satisfactory to the County which must carry an A-6 or better rating as listed in the A.M. Best or equivalent rating guide. Insurance limits indicated below may be lowered at the discretion of the County.

- A. Employers Liability and Workers Compensation Insurance** - The Contractor shall take out and maintain during the life of this contract, **Employers Liability and Workers Compensation Insurance** for all of its employees employed at the site of work, and in case any work is sublet, the Contractor shall require the subcontractor similarly to provide Workers Compensation Insurance for all of the latter's employees unless such employees are covered by the protection afforded by the Contractor. Workers Compensation coverage shall meet Missouri statutory limits. Employers Liability limits shall be \$500,000.00 each employee, \$500,000.00 each accident, and \$500,000.00 policy limit. In case any class of employees engaged in hazardous work under this Contract at the site of the work is not protected under the Workers Compensation Statute, the Contractor shall provide and shall cause each subcontractor to provide Employers Liability Insurance for the protection of their employees not otherwise protected.
- B. Commercial General Liability Insurance** - The Contractor shall take out and maintain during the life of this contract, such commercial general liability insurance as shall protect it and any subcontractor performing work covered by this contract, from claims for damages for personal injury including accidental death, as well as from claims for property damages, which may arise from operations under this contract, whether such operations be by themselves or for any subcontractor or by anyone directly or indirectly employed by them. The amounts of insurance shall be not less than \$3,000,000.00 combined single limit for any one occurrence covering both bodily injury and property damage, including accidental death. If the Contract involves any underground/digging operations, the general liability certificate shall include X, C, and U (Explosion, Collapse, and Underground) coverage. If providing Commercial General Liability Insurance, then the Proof of Coverage of Insurance shall also be included.
- C.** Contractor may satisfy the minimum liability limits required for Commercial General Liability or Business Auto Liability under an Umbrella or Excess Liability policy. There is no minimum per occurrence limit of liability under the umbrella or Excess Liability; however, the Annual Aggregate limit shall not be less than the highest "Each Occurrence" limit for either Commercial General Liability or Business Auto Liability. Contractor agrees to endorse the County as an Additional Insured on the umbrella or Excess Liability, unless the Certificate of Insurance state the Umbrella or Excess Liability provides coverage on a "Follow-Form" basis.
- D. Business Automobile Liability** – The Contractor shall maintain during the life of this contract, automobile liability insurance in the amount of not less than \$3,000,000.00 combined single limit

for any one occurrence, covering both bodily injury, including accidental death, and property damage, to protect themselves from any and all claims arising from the use of the Contractor's own automobiles, teams and trucks; hired automobiles, teams and trucks; non-owned and both on and off the site of work.

- E. Subcontractors:** Contractor shall cause each Subcontractor to purchase and maintain insurance of the types and amounts specified herein. Limits of such coverage may be reduced only upon written agreement of County. Contractor shall provide to County copies of certificates of insurance evidencing coverage for each Subcontractor. Subcontractors' commercial general liability and business automobile liability insurance shall name County as Additional Insured and have the Waiver of Subrogation endorsements added.
- F. Proof of Carriage of Insurance -** The Contractor shall furnish the County with Certificate(s) of Insurance which name the County as additional insured in an amount as required in this contract, contain a description of the project or work to be performed and provided for Commercial General Liability, Business Auto Liability, and Umbrella or Excess Liability (not on Workers Compensation). The Certificate of Insurance shall provide that there will be no cancellation, non-renewal or reduction of coverage without 30 days prior written notice to the Owner. In addition, such insurance shall be on an occurrence basis and shall remain in effect until such time as the County has made final acceptance of the services provided.
- G. INDEMNITY AGREEMENT:** To the fullest extent permitted by law, Contractor shall indemnify, hold harmless and defend the County, its directors, officers, agents, and employees from and against all claims, damages, losses and expenses (including but not limited to attorney's fees) arising by reason of any act or failure to act, negligent or otherwise, of Contractor, of any subcontractor (meaning anyone, including but not limited to consultants having a contract with contractor or a subcontract for part of the services), of anyone directly or indirectly employed by contractor or by any subcontractor, or of anyone for whose acts the contractor or its subcontractor may be liable, in connection with providing these services. This provision does not, however, require contractor to indemnify, hold harmless, or defend the County of Boone from its own negligence.
- H.** Failure to maintain the required insurance in force may be cause for contract termination. In the event the Agency/Service fails to maintain and keep in force the required insurance or to obtain coverage from its subcontractors, the County shall have the right to cancel and terminate the contract without notice.

8.00 Sales/Use Tax Exemption: County will provide the Contractor with a completed Missouri Project Exemption and Missouri Tax Exemption letter for Boone County, Missouri and the Contractor shall be responsible for furnishing the exemption certificate and tax exemption letter to all authorized subcontractors and suppliers providing materials incorporated in the work. All invoices issued for purchases for such materials, supplies and taxable rentals shall be in the name of Boone County and contain the project number assigned by Boone County for the contract awarded. It shall be the responsibility of the Contractor to ensure that no sales or use taxes are included in the invoices and that the County pays no sales/use taxes from which it is exempt. The Contractor shall be responsible for obtaining revised exemption certificates and revised expiration dates if the work extends beyond the estimated project completion date or a certificate expiration date. The Contractor shall also be responsible for retaining a copy of the project exemption certificate for a period of five years and for compliance with all other terms and conditions of section 144.062 RSMo. Not otherwise herein specified. The Contractor agrees not to use or permit others to use the project exemption certificate for taxable purchases of materials or rentals and supplies not directly incorporated into or used in the work to which it applies and agrees to indemnify

and hold the County harmless from all losses, expenses and costs including litigation expenses and attorney fees resulting from the unauthorized use of such project exemption certificates.

9.00 Warranty & Guarantee - Contractor warrants and guarantees to Owner that all work will be in accordance with the Contract Documents and will not be defective. All materials provided by the Contractor shall be new material of high quality which shall give long life and reliable operation. The workmanship shall be of high quality in every detail. Prompt notice of all defects shall be given to Contractor. All defective work, whether or not in place, may be rejected, corrected, or accepted as follows:

Correction or Removal of Defective Work- If required by Owner, Contractor shall promptly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or if the Work has been rejected by County Department Designee, remove it from the site and replace it with non-defective Work. Contractor shall bear all direct, indirect, and consequential costs of such correction or removal (including but not limited to fees and charges of engineers, architects, attorneys, and other professionals made necessary thereby).

One Year Correction Period- If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions, either correct such defective Work, or if it has been rejected by Owner, remove it from the site and replace it with non-defective Work. If Contractor does not promptly comply with the terms of such instructions or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work removed and replaced and all direct, indirect, and consequential costs of removal and replacement (including but not limited to fees and charges of engineers, architects, attorneys, and other professionals) will be paid by the Contractor. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

10.00 EXTRA AND/OR ADDITIONAL WORK AND CHANGES: If any extra and/or additional work is to be done or any change in the plans and specifications is deemed necessary, the County may issue to the Contractor a written change order directing that such extra and/or additional work be done or that such change be made, and the Contract shall be modified accordingly. Compensation to the Contractor will be calculated as an addition to or deduction from the Contract price, based upon such written terms as may be established by the owner, either (a) by an acceptable lump sum proposal of the Contractor, (b) on a cost-plus limited basis not to exceed a specified limit, or (c) on basis of bid or mutually agreed upon unit prices. In the event that none of the foregoing methods are agreed upon with the Contractor, the County may perform the work with its own forces or under separate contract with another contractor.

11.00 DISCHARGE OF EMPLOYEES: Any employee of the Contractor who is stationed at the site of the work and should prove to be quarrelsome, dishonest, incompetent or inexperienced, or should not work for the good of the job shall, upon written notice from the County, be removed by the Contractor and replaced by an employee with proper qualifications.

12.00 SUBCONTRACTORS, SUPPLIERS AND OTHERS- Contractor shall not employ any Subcontractor, Supplier, or other person or organization (including those acceptable to Owner as indicated below), whether initially or as a substitute, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other person or organization to furnish or perform any of the Work against whom the Contractor has a reasonable objection.

If the Owner requires identity of certain Subcontractors, Suppliers, or other persons or organizations (including those who are to furnish the principal items of material and equipment) to be submitted to Owner in advance of the specified date prior to the Effective Date of the Agreement for acceptance by Owner and if Contractor has submitted a list thereof in accordance with the project Specifications, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the bidding documents or the Contract Documents) of any such Subcontractor, Supplier, or other person or organization so identified may be revoked on the basis of reasonable objection after due investigation, in which case Contractor shall submit an acceptable substitute, the Contract Price will be increased by the difference in the cost occasioned by such substitution and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by Owner of any such Subcontractor, Supplier, or other person or organization shall constitute a waiver of any right of Owner to reject defective Work.

13.00 ACCIDENT PREVENTION: Precaution shall be exercised at all times for the protection of persons (including employees) and property. The safety provisions of applicable laws, building and construction codes shall be observed. Machinery, equipment, and all hazards shall be guarded or eliminated in accordance with the safety provisions of the Manual of Accident Prevention in Construction, 8th Edition, 1999, published by the Associated General Contractors of America, to the extent that such provisions are not in contravention of applicable laws. Current standards of the Occupational Safety and Health Act shall be applied, as well as the requirements contained within the current MUTCD.

14.00 LEGAL REQUIREMENTS: The Contractor shall do all work in such manner as to comply with all County ordinances, and laws of the County, State, and Nation as apply to the work herein outlined. The Contractor shall also obtain all necessary licenses and permits and keep necessary records as required.

15.00 EQUAL OPPORTUNITY: The County of Boone is an equal opportunity affirmative action employer, pursuant to federal and state law, and all respondents submitting bids shall be considered to be EEO/AA employers in compliance with federal and state laws, unless otherwise stipulated by the bidders herein.

The Contractor agrees that he will comply with all federal and state laws and regulations and local ordinances and that he will comply and cause each of his subcontractors, and directives pertaining to nondiscrimination against any person on the grounds of race, color, religion, creed, sex, age, ancestry, or national origin in connection with this Contract, including procurement of materials and lease of equipment; therefore, in accordance with the special provisions on that subject attached hereto, incorporated in and made a part of the Contract.

16.00 DOMESTIC PURCHASING POLICY: Contractors are encouraged to select and use materials manufactured, assembled, or produced in the United States in the performance of this contract whenever the quality and price are comparable with other goods. By submission of this bid, the vendor certifies that they are in compliance with section 34.353 and, if applicable, section 34.359 ("Missouri Domestic Products Procurement Act") of the Revised Statutes of Missouri, 1987.

17.00 PROTECTION OF WORK: The Contractor shall take all necessary steps to protect his own workers, the utility personnel, and the public from unnecessary danger or hazard during the prosecution of this work. Danger signs, warning signs, flares, lanterns, railings, barriers, sheeting, shoring, etc, shall be erected to prevent accidents from construction, falling objects, rotating machinery, electric lines and other conditions which might prevent unusual hazard.

18.00 OVERHEAD LINE PROTECTION: The Contractor is aware of the provisions of the Overhead Power Line Safety Act, 319.075 to 319.090 RSMo, and agrees to comply with the provisions thereof.

Contractor understands that it is their duty to notify any utility operating high voltage overhead lines and make appropriate arrangements with said utility if the performance of contract would cause any activity within ten feet of any high voltage overhead line. To the fullest extent permitted by law, Contractor shall indemnify, hold harmless and defend the County, its directors, officers, agents, and employees from and against all claims, damages, losses and expenses (including but not limited to attorney's fees) arising by reason of any act or failure to act, negligent or otherwise, of Contractor, of any subcontractor (meaning anyone, including but not limited to consultants having a contract with contractor or a subcontract for part of the services), of anyone directly or indirectly employed by contractor or by any subcontractor, or of anyone for whose acts the contractor or its subcontractor may be liable, in connection with any claims arising under the Overhead Power Line Safety Act. Contractor expressly waives any action for Contribution against the County on behalf of the Contractor, any subcontractor (meaning anyone, including but not limited to consultants having a contract with contractor or a subcontract for part of the services), anyone directly or indirectly employed by contractor or by any subcontractor, or of anyone for whose acts the contractor or its subcontractor may be liable, and agrees to provide a copy of this waiver to any party affected by this provision.

19.00 OSHA PROGRAM REQUIREMENTS: The Contractor is familiar with the requirements of 292.675 RSMo. The Contractor shall provide a ten-hour Occupational Safety and Health Administration (OSHA) construction safety program for their on-site employees, subcontractors, or others acting on behalf of Contractor on-site which meets the requirements of 292.675 RSMo.

The Contractor and each subcontractor shall keep accurate records of those employees who are working on-site and a record of each such employee's completion of the OSHA program and certify compliance by affidavit at the conclusion of the project.

The Contractor shall forfeit as a penalty to the County the sum of Two Thousand Five Hundred Dollars (\$2,500.00) plus One Hundred Dollars (\$100.00) for each employee employed by the Contractor or subcontractor, for each calendar day, or portion thereof, such employee is found to be employed in violation of 292.675 RSMo. Said amounts shall be withheld from all sums and amounts due under this provision when making payments to the Contractor.

20.00 PAYMENT: This will be a lump sum payment contract upon acceptance by Boone County. Contractor must submit an invoice and charges must only include prices listed in the vendor's bid response. No additional fees or taxes shall be included as additional charges. The County's purchase order must appear on the invoice. The County agrees to pay the invoice within thirty (30) days from receipt of a correct invoice and all other required documents.

21.00 INVOICES: Invoices shall be submitted to Boone County Joint Communications, Attn: Pat Schreiner for payment 30 days after receipt of a correct and valid invoice. The billing address is Boone County Joint Communications, 17 N 7th Street, Suite A, Columbia, MO 65201.

22.00 Bid Clarification: Any questions or clarifications concerning bid documents should be addressed in writing, PRIOR TO BID OPENING, to Melinda Bobbitt, Director of Purchasing, 613 E. Ash Street, Room 110, Columbia, Missouri 65201. Phone: (573) 886-4391; Fax: (573) 886-4390 or Email: mbobbitt@boonecountymmo.org.

23. Prevailing Wage does not apply to this project since the cost of the project is less than \$75,000.

3. Response Presentation and Review

- 3.1. **RESPONSE CONTENT** – In order to enable direct comparison of competing Responses, Bidder must submit Response in strict conformity to the requirements stated herein. Failure to adhere to all requirements may result in Bidder’s Response being disqualified as non-responsive. All Responses must be submitted using the provided Response Sheet. Every question must be answered and if not applicable, the section must contain “N/A”. Manufacturer’s published specifications for the items requested shall be included with the response.
- 3.2. **SUBMITTAL OF RESPONSES** – Responses MUST be received by the date and time notes on the title page under “Bid Submission Information and Deadline”. NO EXCEPTIONS. The County is not responsible for late or incorrect deliveries from the US Postal Service or any other mail carrier.
- 3.3. **Advice of Award** – If you wish to be advised of the outcome of this Bid, the results may be viewed on the County’s web page at www.showmeboone.com.
- 3.4. **BID OPENING** – On the date and time and at the location specified on the title page, all Responses will be opened in public. Brief summary information from each will be read aloud, and any person present will be allowed, under supervision, to scan any Response. In the event only one bid is received by the date and time of the bid opening, County reserves the right to not open the bid and extend the Closing Date for the purpose of inviting bid responses from more vendors in the interest of establishing competition.
- 3.5. **Removal from Vendor Database** – If any prospective Bidder currently in our Vendor Database to whom the Bid was sent elects not to submit a Response and fails to reply in writing stating reason for not bidding, that Bidder’s name may be removed from our database. Other reasons for removal include unwillingness or inability to show financial responsibility, reported poor performance, unsatisfactory service, or repeated inability to meet delivery requirements.
- 3.6. **RESPONSE CLARIFICATION** – The County reserves the right to request additional written or oral information from Bidders in order to obtain clarification of their Responses.
- 3.7. **Rejection or Correction of Responses** – The County reserves the right to reject any or all Responses. Minor irregularities or informalities in any Response which are immaterial or inconsequential in nature, and are neither affected by law nor at substantial variance with Bid conditions, may be waived at our discretion whenever it is determined to be in the County’s best interest.
- 3.8. **EVALUATION PROCESS** – The County’s sole purpose in the evaluation process is to determine from among the Responses received which one is best suited to meet the County’s needs at the lowest possible cost. Any final analysis or weighted point score does not imply that one Bidder is superior to another, but simply that in our judgment the Contract selected appears to offer the best overall solution for our current and anticipated needs at the lowest possible cost.
- 3.9. **Method of Evaluation** – The County will evaluate submitted Responses in relation to all aspects of this Bid.
- 3.10. **Acceptability** – The County reserves the sole right to determine whether goods and/or services offered are acceptable for County use.
- 3.11. **Endurance of Pricing** – Bidder’s pricing must be held until contract execution or 60 days, whichever comes first.

4. Response Form

Company Name: _____
 Address: _____
 City/Zip: _____
 Phone Number: _____
 E-Mail: _____
 Fax Number: _____

Federal Tax I.D. _____
 Corporation
 Partnership – Name _____
 Individual/Proprietorship – Individual Name _____
 Other (Specify) _____

4.00 PRICING

4.01. Assembly and Erection of Radio Tower in Hallsville, Missouri per the requirements stated herein.
\$ _____/LUMP SUM

4.02. Work will begin on project _____ days after receipt of Notice to Proceed.

4.03 Work will be completed _____ days after receipt of Notice to Proceed.

4.04. **Subcontracting:** If Vendor proposes to use subcontractors for this work, list the names of the firms and the work to be assigned in spaces below.

<u>Subcontractor Name/Address</u>	<u>Work Assigned</u>
_____	_____
_____	_____

4.05. The undersigned offers to furnish and deliver the articles or services as specified at the prices and terms stated and in strict accordance with all requirements contained in the Request for Bid which have been read and understood, and all of which are made part of this order. By submission of this bid, the vendor certifies that they are in compliance with Section 34.353 and, if applicable, Section 34.359 (Missouri Domestic Products Procurement Act) of the Revised Statutes of Missouri.

Authorized Representative (Sign By Hand): _____ Date: _____

Print Name and Title of Authorized Representative:

STATEMENT OF BIDDER'S QUALIFICATIONS

Each bidder for the work included in the specifications and plans and the Contract Documents shall submit with their bid the data requested in the following schedule of information. This data must be included in and made a part of each bid document and be contained in the sealed envelope. Failure to comply with this instruction may be regarded as justification for rejecting the Contractor's proposal.

1. Name of Bidder: _____
2. Business Address: _____
3. When Organized: _____
4. When Incorporated: _____
If not incorporated, state type of business (sole proprietor, partnership, or other) _____
5. List federal tax identification number: _____
6. Number of years engaged in business under present firm name: _____
7. If you have done business under a different name, please give name and business location under that name: _____
8. Percent of work done by own staff: _____
9. Have you ever failed to complete any work awarded to your company? If so, where and why?

10. Have you ever defaulted on a contract? _____ If so, give _____
11. List of contracts completed within the last three years for work similar in scope to that described in this bid, including value of each. _____
12. List of projects currently in progress: _____

*** Attach additional sheets as necessary ***



Boone County Purchasing
613 E. Ash, Room 110
Columbia, MO 65201

Standard Terms and Conditions

Melinda Bobbitt, CPPO, CPPB, Director of Purchasing
Phone: (573) 886-4391 – Fax: (573) 886-4390

STANDARD TERMS AND CONDITIONS - BOONE COUNTY, MISSOURI

1. Contractor shall comply with all applicable federal, state, and local laws and failure to do so, in County's sole discretion, shall give County the right to terminate this Contract.
2. Responses shall include all charges for packing, delivery, installation, etc., (unless otherwise specified) to the Boone County Department identified in the Request for Bid and/or Proposal.
3. The Boone County Commission has the right to accept or reject any part or parts of all bids, to waive technicalities, and to accept the offer the County Commission considers the most advantageous to the County. Boone County reserves the right to award this bid on an item-by-item basis, or an "all or none" basis, whichever is in the best interest of the County.
4. Bidders must use the bid forms provided for the purpose of submitting bids, must return the bid and bid sheets comprised in this bid, give the unit price, extended totals, and sign the bid. The Purchasing Director reserves the right, when only one bid has been received by the bid closing date, to delay the opening of bids to another date and time in order to revise specifications and/or establish further competition for the commodity or service required. The one (1) bid received will be retained unopened until the new Closing date, or at request of bidder, returned unopened for re-submittal at the new date and time of bid closing.
5. When products or materials of any particular producer or manufacturer are mentioned in our specifications, such products or materials are intended to be descriptive of type or quality and not restricted to those mentioned.
6. Do not include Federal Excise Tax or Sales and Use Taxes in bid process, as law exempts the County from them.
7. The delivery date shall be stated in definite terms, as it will be taken into consideration in awarding the bid.
8. The County Commission reserves the right to cancel all or any part of orders if delivery is not made or work is not started as guaranteed. In case of delay, the Contractor must notify the Purchasing Department.
9. In case of default by the Contractor, the County of Boone will procure the articles or services from other sources and hold the Bidder responsible for any excess cost occasioned thereby.
10. Failure to deliver as guaranteed may disqualify Bidder from future bidding.

11. Prices must be as stated in units of quantity specified and must be firm. Bids qualified by escalator clauses may not be considered unless specified in the bid specifications.
12. No bid transmitted by fax machine or e-mail will be accepted.
13. The County of Boone, Missouri expressly denies responsibility for, or ownership of any item purchased until same is delivered to the County and is accepted by the County.
14. The County reserves the right to award to one or multiple respondents. The County also reserves the right to not award any item or group of items if the services can be obtained from a state or other governmental entities contract under more favorable terms. The resulting contract will be considered "Non-Exclusive". The County reserves the right to purchase from other vendors.
15. The County, from time to time, uses federal grant funds for the procurement of goods and services. Accordingly, the provider of goods and/or services shall comply with federal laws, rules and regulations applicable to the funds used by the County for said procurement, and contract clauses required by the federal government in such circumstances are incorporated herein by reference. These clauses can generally be found in the *Federal Transit Administration's Best Practices Procurement Manual – Appendix A*. Any questions regarding the applicability of federal clauses to a particular bid should be directed to the Purchasing Department prior to bid opening.
16. In the event of a discrepancy between a unit price and an extended line item price, the unit price shall govern.
17. Should an audit of Contractor's invoices during the term of the Agreement, and any renewals thereof, indicate that the County has remitted payment on invoices that constitute an over-charging to the County above the pricing terms agreed to herein, the Contractor shall issue a refund check to the County for any over-charges within 30-days of being notified of the same.
18. For all bid responses over \$25,000, if any manufactured goods or commodities proposed with bid/proposal response are manufactured or produced outside the United States, this MUST be noted on the Bid/Proposal Response Form or a Memo attached.
19. **For all titled vehicles and equipment, the dealer must use the actual delivery date to the County on all transfer documents** including the Certificate of Origin (COO,) Manufacturer's Statement of Origin (MSO,) Bill of Sale (BOS,) and Application for Title.
20. **Equipment and serial and model numbers** - The contractor is strongly encouraged to include equipment serial and model numbers for all amounts invoiced to the County. If equipment serial and model numbers are not provided on the face of the invoice, such information may be required by the County before issuing payment.

Revised 1/17/2018

INSTRUCTIONS FOR COMPLIANCE WITH HOUSE BILL 1549

House Bill 1549 addresses the Department of Homeland Security's and the Social Security Administration's E-Verify Program (Employment Eligibility Verification Program) that requires the County to verify "lawful presence" of individuals when we contract for work/service; verify that contractor has programs to verify lawful presence of their employees when contracts exceed \$5,000; and a requirement for OSHA safety training for public works projects.

The County is required to obtain certification that the bidder awarded the attached contract participates in a federal work authorization program. To obtain additional information on the Department of Homeland Security's E-Verify program, go to:

<http://www.uscis.gov/portal/site/uscis/menuitem.eb1d4c2a3e5b9ac89243c6a7543f6d1a/?vgnextoid=75bce2e261405110VgnVCM1000004718190aRCRD&vgnnextchannel=75bce2e261405110VgnVCM1000004718190aRCRD>

Please complete and return form *Work Authorization Certification Pursuant to 285.530 RSMo* if your contract amount is in excess of \$5,000. **Attach to this form the first and last page of the *E-Verify Memorandum of Understanding* that you completed when enrolling for proof of enrollment.**

If you are an Individual/Proprietorship, then you must return the attached *Certification of Individual Bidder*. On that form, you may do one of the three options listed. Be sure to attach any required information for those options as detailed on the *Certification of Individual Bidder*. If you choose option number two, then you will also need to complete and return the attached form *Affidavit*.

CERTIFICATION OF INDIVIDUAL BIDDER

Pursuant to Section 208.009 RSMo, any person applying for or receiving any grant, contract, loan, retirement, welfare, health benefit, post secondary education, scholarship, disability benefit, housing benefit or food assistance who is over 18 must verify their lawful presence in the United States. Please indicate compliance below. Note: A parent or guardian applying for a public benefit on behalf of a child who is citizen or permanent resident need not comply.

- ____ 1. I have provided a copy of documents showing citizenship or lawful presence in the United States. (Such proof may be a Missouri driver’s license, U.S. passport, birth certificate, or immigration documents). Note: If the applicant is an alien, verification of lawful presence must occur prior to receiving a public benefit.

- ____ 2. I do not have the above documents but provide an affidavit (copy attached) which may allow for temporary 90 day qualification.

- ____ 3. I have provided a completed application for a birth certificate pending in the State of _____. Qualification shall terminate upon receipt of the birth certificate or determination that a birth certificate does not exist because I am not a United States citizen.

Applicant

Date

Printed Name

AFFIDAVIT
(Only Required for Individual Bidder Certification Option #2)

State of Missouri)
)SS.
County of _____)

I, the undersigned, being at least eighteen years of age, swear upon my oath that I am either a United States citizen or am classified by the United States government as being lawfully admitted for permanent residence.

Date

Signature

Social Security Number
or Other Federal I.D. Number

Printed Name

On the date above written _____ appeared before me and swore that the facts contained in the foregoing affidavit are true according to his/her best knowledge, information and belief.

Notary Public

My Commission Expires:

(Please complete and return with Bid)

Certification Regarding
Debarment, Suspension, Ineligibility and Voluntary Exclusion
Lower Tier Covered Transactions

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 29 CFR Part 98 Section 98.510, Participants' responsibilities. The regulations were published as Part VII of the May 26, 1988, Federal Register (pages 19160-19211).

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS FOR CERTIFICATION)

- (1) The prospective recipient of Federal assistance funds certifies, by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (2) Where the prospective recipient of Federal assistance funds is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Name and Title of Authorized Representative

Signature

Date

ANTI-COLLUSION STATEMENT

STATE OF MISSOURI

COUNTY OF _____

_____, being first duly sworn, deposes and

says that he is _____

(Title of Person Signing)

of _____

(Name of Bidder)

that all statements made, and facts set out in the proposal for the above project are true and correct; and the bidder (person, firm, association, or corporation making said bid) has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with said bid or any contract which may result from its acceptance.

Affiant further certifies that bidder is not financially interested in, or financially affiliated with, any other bidder for the above project

By _____ By _____

By _____

Sworn to before me this _____ day of _____, 20 _____

Notary Public

My Commission Expires _____

SIGNATURE AND IDENTITY OF BIDDER

The undersigned states that the correct LEGAL NAME and ADDRESS of (1) the individual Bidder, (2) each partner or joint venture (whether individuals or corporations, and whether doing business under fictitious name), or (3) the corporation (with the state in which it is incorporated) are shown below; that (if not signing with the intention of binding himself to become the responsible and sole Contractor) he is the agent of, and duly authorized in writing to sign for the Bidder or Bidders; and that he is signing and executing this (as indicated in the proper spaces below) as the proposal of a:

- sole individual partnership joint venture
 corporation, incorporated under laws of the state of _____

Dated _____, 20 _____

Name of individual, all partners, or joint venturers:

Address of each:

_____	_____
_____	_____
_____	_____
_____	_____

Address of principal place of business in doing business under the name of:

(If using a fictitious name, show this name above in addition to legal names.)

(If a corporation – show its name above)

ATTEST:

(Secretary)

(Title)

NOTE: If the Bidder is doing business under a FICTITIOUS NAME, the Proposal shall be executed in the legal name of the individual, partners, joint venturers, or corporation, with the legal address shown, and the REGISTRATION OF FICTITIOUS NAME filed with the Secretary of State, as required by Section 417.200 to 417.230, RS Mo. shall be attached. If the Bidder is a CORPORATION NOT ORGANIZED UNDER THE LAWS OF MISSOURI, it shall procure a CERTIFICATE OF AUTHORITY

TO DO BUSINESS IN MISSOURI, as required by Section 351.570 and following, RS Mo. A CERTIFIED COPY of such Registration of Fictitious Name or Certificate of Authority to do Business in Missouri shall be filed with the Engineer.

BIDDER'S ACKNOWLEDGMENT

(Complete and fill out all parts applicable and strike out all parts not applicable.)

State of _____ County of _____

On this _____ day of _____, 20 _____

before me appeared _____ to me personally known, who, being by me first duly sworn, did say that he executed the foregoing Proposal with full knowledge and understanding of all its terms and provisions and of the plans and specifications; that the correct legal name and address of the Bidder (including those of all partners of joint ventures if fully and correctly set out above; that all statements made therein by or for the Bidder are true; and (if a sole individual) acknowledged that he executed the same as his free act and deed.

(if a partnership or joint venture) acknowledged that his executed same, with written authority from, and as the free act and deed of, all said partners or joint ventures.

(if a corporation) that he is the _____
President or other agent

of _____; that the above Proposal was signed and sealed in behalf of said corporation by authority of its board of directors; and he acknowledged said proposal to be the free act and deed of said corporation.

Witness my hand and seal at, _____ the day and year first above written. (SEAL).

Notary Public

My Commission expires _____, 20_____.



“No Bid” Response Form

Boone County Purchasing
613 E. Ash, Room 110
Columbia, MO 65201

Melinda Bobbitt, Director of Purchasing
(573) 886-4391 – Fax: (573) 886-4390

“NO BID RESPONSE FORM”

**NOTE: COMPLETE AND RETURN THIS FORM ONLY IF YOU DO NOT WANT TO
SUBMIT A BID**

If you do not wish to respond to this bid request, but would like to remain on the Boone County vendor list **for this service/commodity**, please remove form and return to the Purchasing Department by mail or fax.

If you would like to FAX this “No Bid” Response Form to our office, the FAX number is (573) 886-4390.

**Bid: 71-12NOV15 – Assembly and Erection of Radio Tower in Hallsville,
Missouri**

Business Name: _____

Address: _____

Telephone: _____

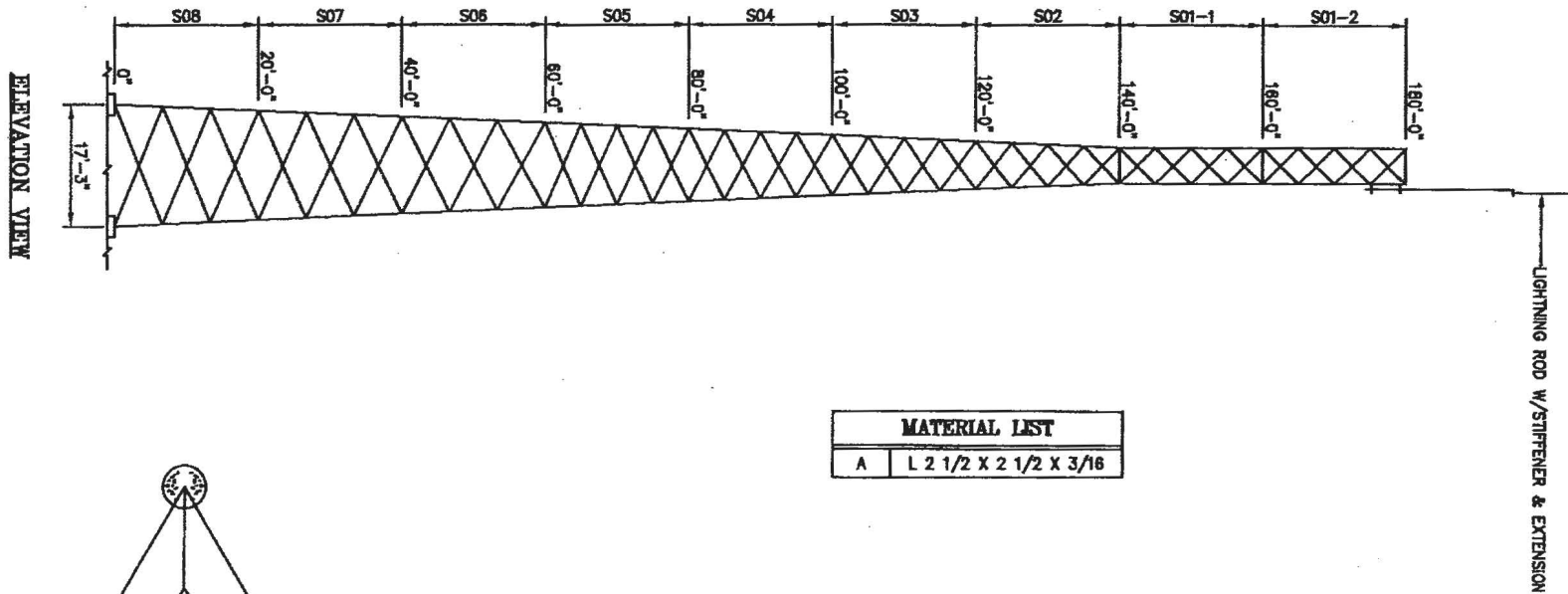
Contact: _____

Date: _____

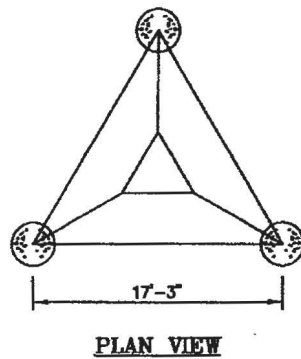
Reason(s) for not bidding:

INSERT DRAWINGS

LEGS	4.5 S.R.	4.25 S.R.		3.75 S.R.	3.5 S.R.	3.25 S.R.	3.0 S.R.	2.5 S.R.	2.0 S.R.
DIAGONALS	L 3 X 3 X 1/4		L 3 X 3 X 3/16	A	L 2 X 2 X 1/4	L 2 X 2 X 3/16	L 2 X 2 X 1/8	L 2 X 2 X 1/4	L 2 X 2 X 1/8
HORIZONTALS	NONE								
BAYS/SECTION	3 BAYS				4 BAYS				
SECTION WEIGHT	5640 LBS.	5010 LBS.	4457 LBS.	3704 LBS.	3207 LBS.	2599 LBS.	2138 LBS.	1846 LBS.	1165 LBS.



MATERIAL LIST	
A	L 2 1/2 X 2 1/2 X 3/16



UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:		Sabre Industries Towers and Poles	MASTER: 180 FT. MODEL S3R-SD		
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL			SITE: HALLSVILLE, MO		
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REV	DATE	DESIGNER	DESCRIPTION	JOB NO. 414025	SIZE / B	DRAWING NO. 414025-MS	REV 0
				DATE 09/25/18			
				DRAWN BY DLK			
				CHECKED BY ZAK		SCALE NONE	PAGE 1 OF 2



DRAWING LIST

- 414025-F1 CAISSON FOUNDATION
- 414025-F2 MAT & PIER FOUNDATION
- C30400129 LEG TO LEG TEMPLATE
- 906195 TOWER BASE INSTALLATION
- 414025-S08 SECTION 0 FT. - 20 FT.
- 414025-S07 SECTION 20 FT. - 40 FT.
- 414025-S06 SECTION 40 FT. - 60 FT.
- 414025-S05 SECTION 60 FT. - 80 FT.
- 414025-S04 SECTION 80 FT. - 100 FT.
- 414025-S03 SECTION 100 FT. - 120 FT.
- 414025-S02 SECTION 120 FT. - 140 FT.
- 414025-S01-1 SECTION 140 FT. - 160 FT.
- 414025-S01-2 SECTION 160 FT. - 180 FT.
- 414025-CL1 16" CLIMBING LADDER INSTALLATION
- 9029450 16" CLIMBING LADDER
- 9031527 LADDER BASE
- 900219 STEP/CONSTRUCTION BOLT INSTALLATION
- SEE MANUAL W/KIT CABLE SAFETY CLIMB DEVICE
- 414025-WG1 WAVEGUIDE LADDER INSTALLATION
- 414025-WG2 WAVEGUIDE LADDER INSTALLATION
- 414025-WG3 WAVEGUIDE LADDER INSTALLATION
- 9028851 WAVEGUIDE LADDER (15 HOLE)
- 9031598 FIXED PLATFORM @ 178'
- 414025-PM1 4 1/2 O.D. PIPE MOUNT KITS @ 170'
- 414025-DT1 STIFFARM MOUNT KITS FOR PIPE MOUNTS @ 170'
- 414025-PM2 4 1/2 O.D. PIPE MOUNT KITS @ 160'
- 414025-DT2 STIFFARM MOUNT KITS FOR PIPE MOUNTS @ 160' (ABOVE SPLICE)
- 414025-PM3 4 1/2 O.D. PIPE MOUNT KITS @ 150'
- 414025-DT3 STIFFARM MOUNT KITS FOR PIPE MOUNTS @ 150'
- 414025-SA1 3' SIDEARMS @ 125'
- 414025-PM4 4 1/2 O.D. PIPE MOUNT KITS FOR SIDEARMS @ 125'
- 414025-ST1 SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARMS @ 125'
- 414025-SA2 3' SIDEARMS @ 90'
- 414025-PM5 4 1/2 O.D. PIPE MOUNT KITS FOR SIDEARMS @ 90'
- 414025-ST2 SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARMS @ 90'
- 414025-LR LIGHTNING ROD W/STIFFENER & EXTENSION
- 9014671 BOLT INSTALLATION
- 906956 TOWER NAME PLATE
- 907901 INVENTORY REQUIREMENT SHEET
- BOM-1 BILL OF MATERIAL

TOWER DESIGN INFORMATION

THIS ERECTION DRAWING PACKAGE IS BASED ON THE STRUCTURAL ANALYSIS NO. 414025.


THIS TOWER WAS DESIGNED FOR A BASIC WIND SPEED OF 90 MPH WITH 0" OF RADIAL ICE, AND 40 MPH WITH 1" OF RADIAL ICE, IN ACCORDANCE WITH ANSI/TIA-222-G, IMPORTANCE FACTOR = 1.25, EXPOSURE CATEGORY C, TOPOGRAPHIC CATEGORY 1.

THE TOWER DESIGN MEETS THE REQUIREMENTS FOR AN ULTIMATE WIND SPEED OF 120 MPH (RISK CATEGORY III), IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING CODE.

TOWER DESIGNED ANTENNA LOADING

ELEV.	ANTENNAS	ELEV.	ANTENNAS
188.3'	ATC GD1V40	150'	(2) LEG DISH MOUNT
187.7'	(3) DB809DK-Y	150'	LEG DISH MOUNT
178'	(3) LEG DISH MOUNT	150'	(1) 4' H.P. DISH
178'	PLATFORM - FIXED	150'	(2) 6' H.P. DISH
178'	(3) SP2-5.2	135.3'	ATC GD1V40
170'	(2) LEG DISH MOUNT	125'	(3) 6FT SIDEARMS
170'	LEG DISH MOUNT	115'	3V-BOOM - 12FT FACE - 3FT STANDOFF W/ WORK PLATFORMS
170'	(1) 4' H.P. DISH	115'	(12) 5960110
170'	(2) 6' H.P. DISH	115'	(3) TTA (24IN X 30IN 12IN)
160'	(2) LEG DISH MOUNT	100.62'	(3) DB224
160'	LEG DISH MOUNT	90'	(3) 6FT SIDEARMS
160'	(1) 4' H.P. DISH	55.29'	(3) DB222
160'	(2) 6' H.P. DISH	50'	(3) 3FT SIDEARMS

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL
REV	DATE	DESCRIPTION

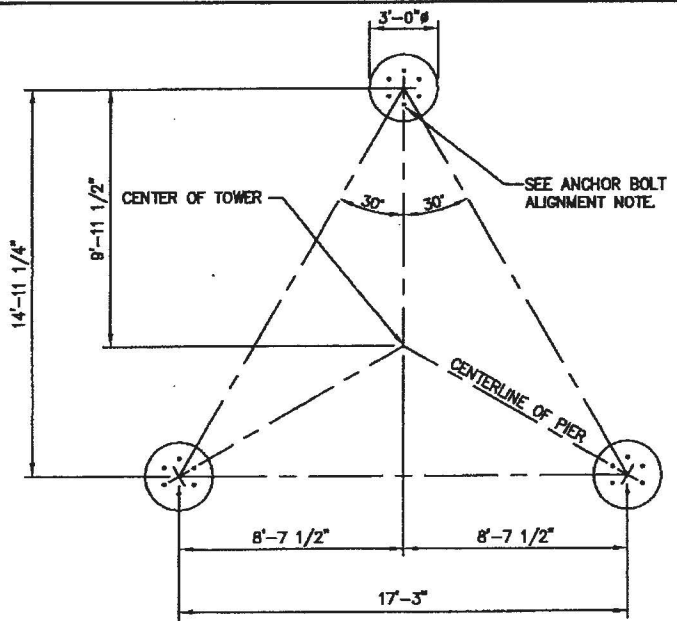


Sabre Industries
 Towers and Poles

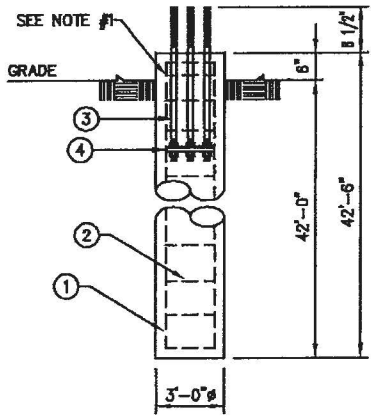
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MASTER: 180 FT. MODEL S3R-SD
SITE: HALLSVILLE, MO
CUSTOMER: BOONE COUNTY, MO

JOB NO. 414025	SIZE	DRAWING NO.	REV
DATE 09/25/18	B	414025-MS	0
DRAWN BY DLK	CHECKED BY ZAK	SCALE NONE	PAGE 2 OF 2



PLAN VIEW



ELEVATION VIEW

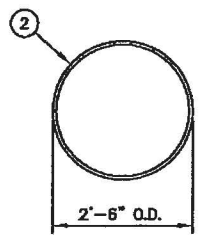
REINFORCING STEEL SCHEDULE									
ITEM	LOCATION	NO. REQ'D.	BAR SPC'G.	SIZE	CUT LGTH.	TOTAL LGTH.	TOTAL WT.	SHAPE	
①	PIER VERTICAL REINFORCING	42	EQUALLY SPACED	#10	42'-0"	1784'-0"	7580 LBS.	STRAIGHT	
②	PIER TIES	132	SPACED 12" C/C	#4	9'-1"	1199'-0"	801 LBS.	○	
TOTAL REBAR WT.							8391 LBS.		

ANCHOR BOLT SCHEDULE				
ITEM	PART NO.	NO. REQ'D.	ANCHOR BOLT SIZE	SPACING
③	C4004-1060	18	1 1/2" x 6'-6"	EQUALLY SPACED

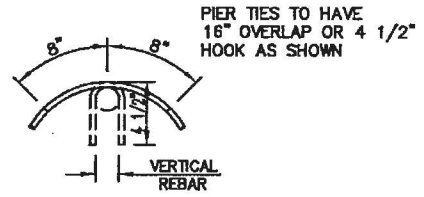
TEMPLATE SCHEDULE			
ITEM	PART NO.	NO. REQ'D.	BOLT CIRCLE
④	C30139210	6	10 1/4"

CONCRETE REQ'D	
PER PIER	11.13 CU. YDS.
TOTAL	33.39 CU. YDS.

SEE PAGE 2 FOR GENERAL NOTES



REBAR DETAIL (PIER TIES)



PIER TIE HOOK DETAIL

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:	
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL	
REV	DATE	DRN/CHK	DESCRIPTION

Sabre Industries
Towers and Poles

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FOUNDATION: 180 FT. MODEL S3R-SD			
SITE: HALLSVILLE, MO			
CUSTOMER: BOONE COUNTY, MO			
JOB NO. 414025	SIZE B	DRAWING NO. 414025-F1	REV 0
DATE 07/19/18	DRAWN BY DLK	CHECKED BY KD	SCALE NONE
PAGE 1 OF 2		PAGE 1 OF 2	

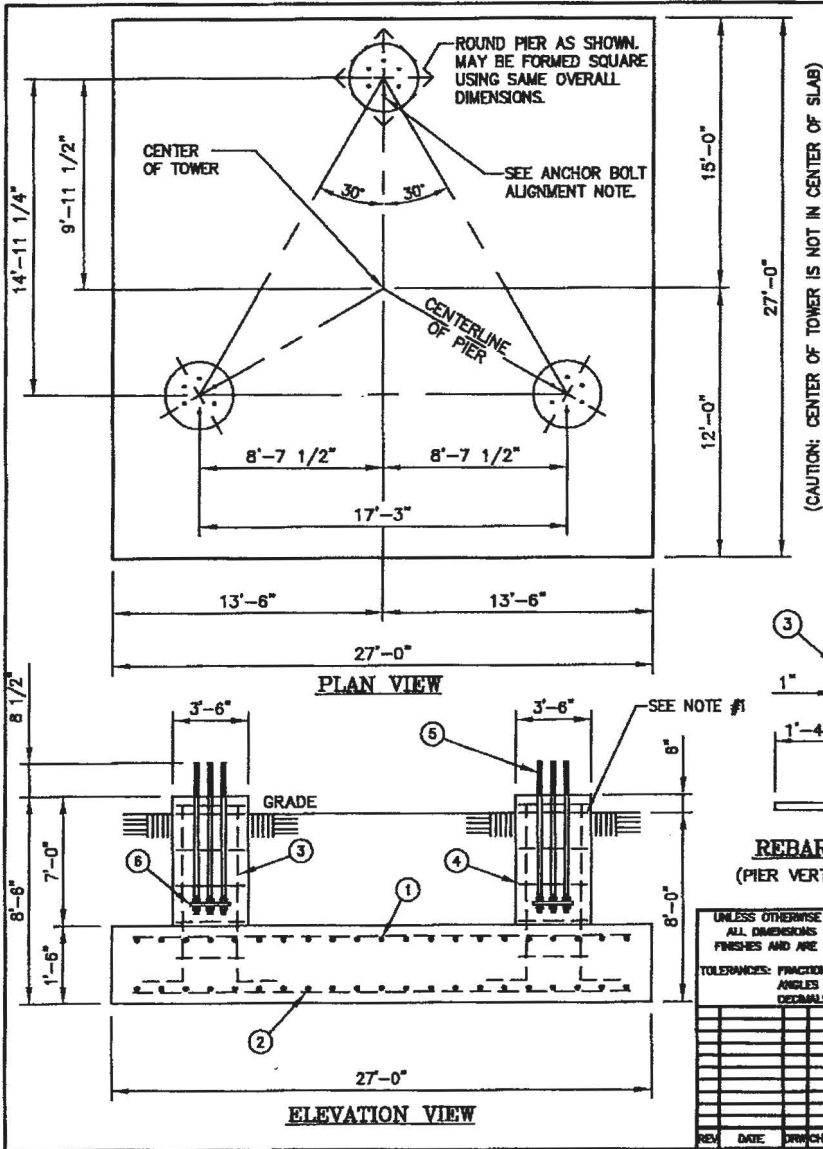
GENERAL NOTES

1. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4500 PSI, IN ACCORDANCE WITH ACI 318-11. (2 REBAR TIES REQ'D IN THE TOP 5")
2. REBARS TO CONFORM TO ASTM SPECIFICATION A615 GRADE 60.
3. ALL REBAR TO HAVE A MINIMUM OF 3" CONCRETE COVER.
4. ALL EXPOSED CONCRETE CORNERS TO BE CHAMFERED 3/4".
5. THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT BY CROCKETT GTL PROJECT NO. G18307, DATED: 3/29/18
6. SEE THE GEOTECHNICAL REPORT FOR DRILLED PIER INSTALLATION REQUIREMENTS, IF SPECIFIED.
7. THE BOTTOM ANCHOR BOLT TEMPLATE SHALL BE POSITIONED AS CLOSELY AS POSSIBLE TO THE BOTTOM OF THE ANCHOR BOLTS.
8. DISTANCE BETWEEN CENTER OF ANCHOR BOLT CAGE AND THE CENTER OF THE PIER NOT TO EXCEED 1/2" WITHOUT APPROVAL FROM ENGINEER OF RECORD.
9. ONE ANCHOR BOLT MUST BE ALIGNED DIRECTLY WITH THE CENTER OF THE TOWER (TYPICAL).

BASE REACTIONS

TOTAL FOUNDATION		INDIVIDUAL FOOTING	
SHEAR (KIPS)	64.74	SHEAR (KIPS)	38.28
AXIAL (KIPS)	189.88	COMPRESSION (KIPS)	462
MOMENT (FT-KIPS)	6798	UPLIFT (KIPS)	423

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:			FOUNDATION: 180 FT. MODEL SSR-SD						
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL			SITE: HALLSVILLE, MO						
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					DATE	07/19/18	B	414025-F1	0		
					DRAWN BY	DLK			SCALE	PAGE	
					CHECKED BY	KD ✓			NONE	2 OF 2	
REV	DATE	BY/CHK	DESCRIPTION								



REINFORCING STEEL SCHEDULE

ITEM	LOCATION	NO. REQ'D.	BAR SPC'G.	SIZE	CUT LGTH.	TOTAL LGTH.	TOTAL WT.	SHAPE
①	PAD TOP REINFORCING	86	EQUALLY SPACED	#10	26'-6"	2279'-0"	9807 LBS.	STRAIGHT
②	PAD BOTTOM REINFORCING	86	EQUALLY SPACED	#10	26'-6"	2279'-0"	9807 LBS.	STRAIGHT
③	PIER VERTICAL REINFORCING	48	EQUALLY SPACED	#8	9'-1"	436'-0"	1164 LBS.	U
④	PIER TIES	30	SPACED 11" C/C	#4	10'-8"	320'-0"	214 LBS.	O
TOTAL REBAR WT.							20992 LBS.	

ANCHOR BOLT SCHEDULE

ITEM	PART NO.	NO. REQ'D.	ANCHOR BOLT SIZE	SPACING
⑤	C40041060	18	1 1/2" x 6'-6"	EQUALLY SPACED

TEMPLATE SCHEDULE

ITEM	PART NO.	NO. REQ'D.	BOLT CIRCLE
⑥	C30139210	6	10 1/4"

CONCRETE REQ'D	ROUND PIERS	SQUARE PIERS
PAD	40.50 CU. YDS.	40.50 CU. YDS.
PIERS	7.48 CU. YDS.	9.53 CU. YDS.
TOTAL	47.98 CU. YDS.	50.03 CU. YDS.

SEE PAGE 2 FOR GENERAL NOTES

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL: TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV.	DATE	BY/CHK	DESCRIPTION

Sabre Industries
Towers and Poles

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FOUNDATION: 180 FT. MODEL SSR-SD
SITE: HALLSVILLE, MO
CUSTOMER: BOONE COUNTY, MO

JOB NO. 414025	SIZE B	DRAWING NO. 414025-F2	REV 0
DATE 07/19/18	DRWN BY DLK	CHECKED BY KD	SCALE NONE
		SCALE NONE	PAGE 1 OF 2



GENERAL NOTES

1. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4500 PSI, IN ACCORDANCE WITH ACI 318-11. (2 REBAR TIES REQ'D IN THE TOP 5")
2. REBAR TO CONFORM TO ASTM SPECIFICATION A615 GRADE 60.
3. ALL REBAR TO HAVE A MINIMUM OF 3" CONCRETE COVER.
4. ALL EXPOSED CONCRETE CORNERS TO BE CHAMFERED 3/4".
5. THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT BY CROCKETT GTL PROJECT NO. G18307, DATED: 3/29/18
6. SEE THE GEOTECHNICAL REPORT FOR COMPACTION REQUIREMENTS, IF SPECIFIED.
7. 6.5 FT OF SOIL COVER IS REQUIRED OVER THE ENTIRE AREA OF THE FOUNDATION SLAB.
8. THE BOTTOM ANCHOR BOLT TEMPLATE SHALL BE POSITIONED AS CLOSELY AS POSSIBLE TO THE BOTTOM OF THE ANCHOR BOLTS.
9. DISTANCE BETWEEN CENTER OF ANCHOR BOLT CAGE AND THE CENTER OF THE PIER NOT TO EXCEED 1/2" WITHOUT APPROVAL FROM ENGINEER OF RECORD.
10. ONE ANCHOR BOLT MUST BE ALIGNED DIRECTLY WITH THE CENTER OF THE TOWER (TYPICAL).

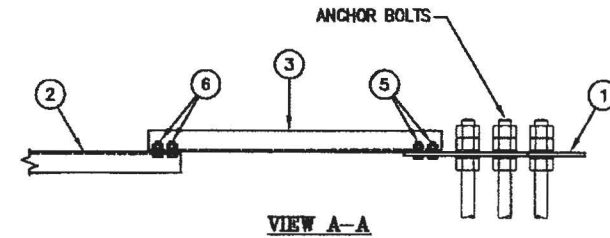
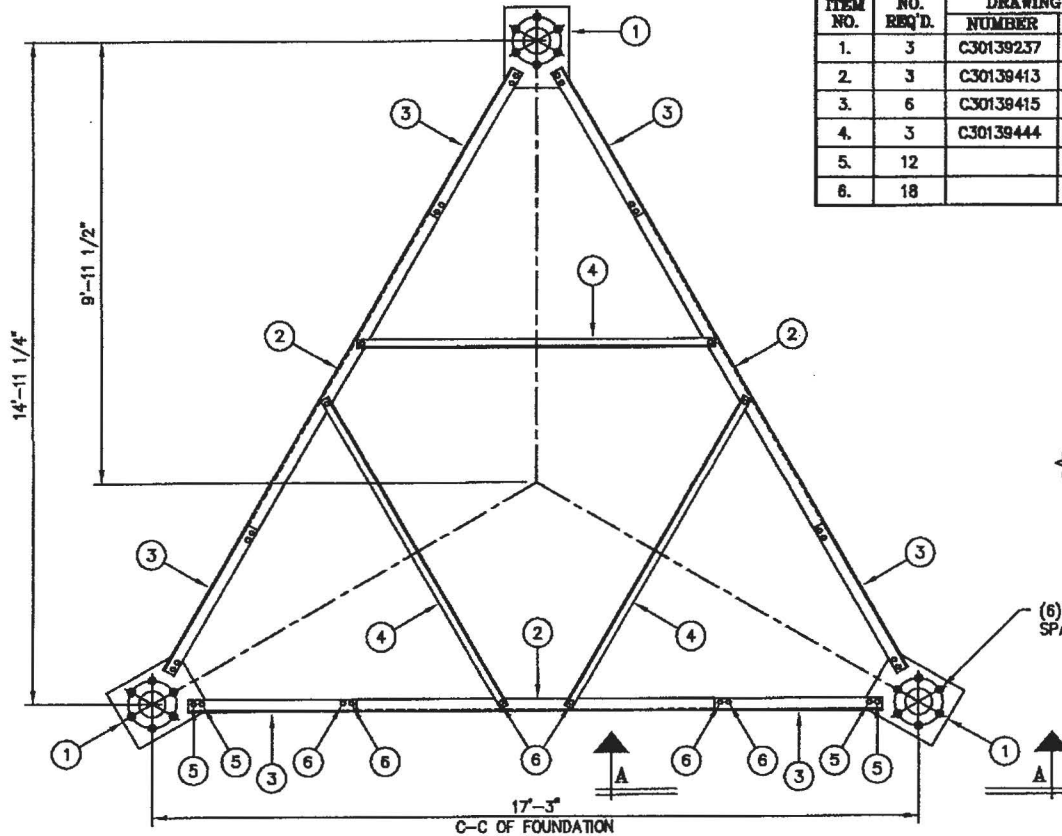
BASE REACTIONS

TOTAL FOUNDATION		INDIVIDUAL FOOTING	
SHEAR (KIPS)	64.74	SHEAR (KIPS)	38.28
AXIAL (KIPS)	189.88	COMPRESSION (KIPS)	462
MOMENT (FT-KIPS)	6798	UPLIFT (KIPS)	423

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:				FOUNDATION: 180 FT. MODEL S3R-SD			
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL				SITE: HALLSVILLE, MO			
				<p>CONFIDENTIAL</p> <p>This document and the information contained herein is the confidential trade secret property of Sabre Communications Corporation ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre. © 2018 Sabre Communications Corporation. All rights reserved.</p>		CUSTOMER: BOONE COUNTY, MO			
				JOB NO. 414025	SIZE	DRAWING NO.		REV	
				DATE	07/19/18	B	414025-F2	0	
				DRAWN BY	DLK	SCALE		PAGE	
				CHECKED BY	KD ✓	NONE		2 OF 2	
REV	DATE	DRW/CHK	DESCRIPTION						

C30400129 LEG TO LEG TEMPLATE

ITEM NO.	NO. REQ'D.	DRAWING		PART NO.	DESCRIPTION	WEIGHT LBS.	PAINT
		NUMBER	REV				
1.	3	C30139237	0	C30139237	PLATE, ANCHOR BOLT TEMPLATE, 1 1/2" A.B. ON A 10 1/4" B.C.	97	N/R
2.	3	C30139413	0	C30139413	ANGLE, TEMPLATE SUPPORT, 3 X 3 X 3/16 X 10'-0"	111	N/R
3.	6	C30139415	0	C30139415	ANGLE, TEMPLATE SUPPORT, 3 X 3 X 3/16 X 3'-3 1/4"	73	N/R
4.	3	C30139444	0	C30139444	ANGLE, TEMPLATE SUPPORT, 2 1/2 X 2 1/2 X 3/16 X 8'-1 1/2"	75	N/R
5.	12			C40026023	BOLT ASSEMBLY, 5/8" Ø X 2 A325	6	
6.	18			C40026022	BOLT ASSEMBLY, 5/8" Ø X 1 3/4 A325	8	
TOTAL WEIGHT IN LBS.						370	



(6) 1 1/2" Ø ANCHOR BOLTS SPACED 60" APART ON A 10 1/4" BOLT CIRCLE

NOTE:

1. ALWAYS COMPARE THE DIMENSIONS SHOWN ON THIS DRAWING WITH THE PROPER CONCRETE FOUNDATION DRAWING, PRIOR TO PLACING CONCRETE.
2. ONE ANCHOR BOLT MUST BE ALIGNED DIRECTLY WITH THE CENTER OF THE TOWER (TYPICAL AT ALL (3) LEGS).
3. VERIFY ANCHOR BOLT CIRCLE CENTER-TO-CENTER SPACING ON ALL (3) FACES AND ALIGNMENT OF ANCHOR BOLTS WITH THE CENTER OF THE TOWER AT ALL (3) LEGS PRIOR TO PLACING CONCRETE.
4. PROVIDE NECESSARY SUPPORT TO ELIMINATE ANY MOVEMENT DURING CONCRETE PLACEMENT AND CURING.

PLAN VIEW

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:	
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL.	
REV	DATE	BY	DESCRIPTION
1	10/13/17	SKM	REVISED NOTES

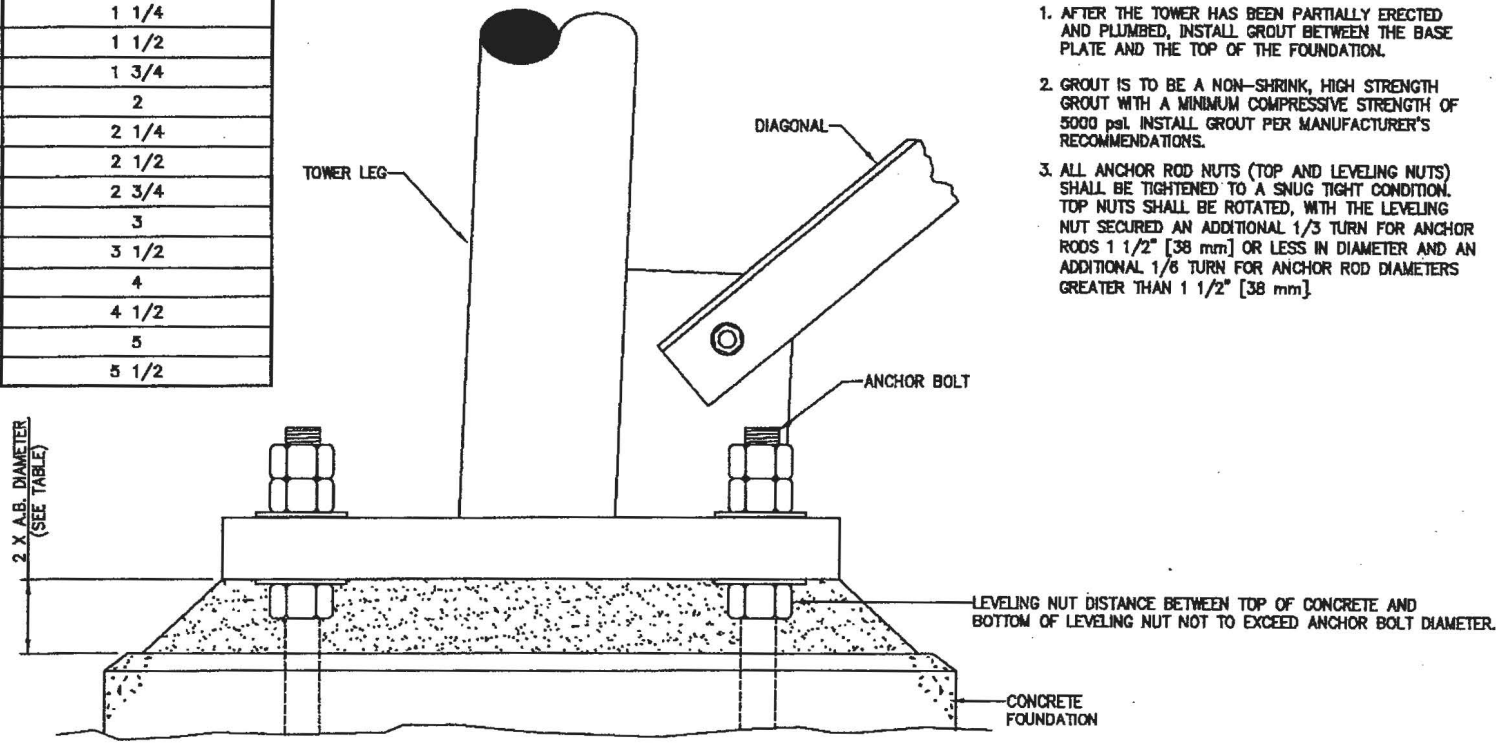
Sabre Industries
Towers and Poles

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LEG TO LEG TEMPLATE INSTALLATION FOR MODEL S3R-SD SECTION 08
BASE SPREAD 17'-3" C-C OF FOUNDATION
(6) 1 1/2" Ø A.B. ON A 10 1/4" Ø B.C.

REF. 9031090	SIZE B	DRAWING NO. C30400129	REV 1
DATE 8/18/16	DRAWN BY DJB	SCALE None	PAGE 1 OF 1
CHECKED BY KTW			

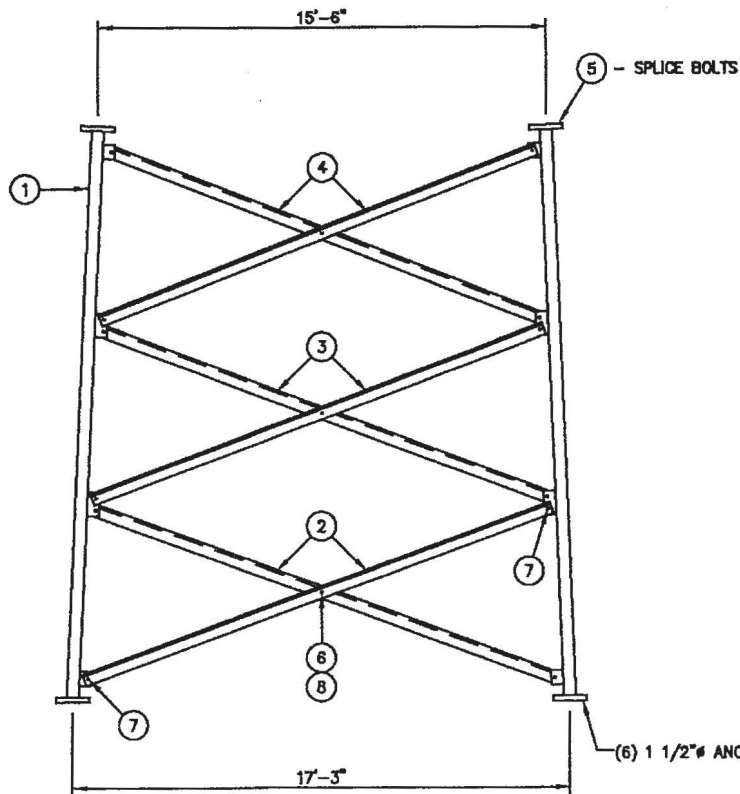
TABLE	
ANCHOR BOLT DIAMETER (in)	MAXIMUM SPACE (in)
1/2	1
5/8	1 1/4
3/4	1 1/2
7/8	1 3/4
1	2
1 1/8	2 1/4
1 1/4	2 1/2
1 3/8	2 3/4
1 1/2	3
1 3/4	3 1/2
2	4
2 1/4	4 1/2
2 1/2	5
2 3/4	5 1/2



- NOTES:**
1. AFTER THE TOWER HAS BEEN PARTIALLY ERRECTED AND PLUMBED, INSTALL GROUT BETWEEN THE BASE PLATE AND THE TOP OF THE FOUNDATION.
 2. GROUT IS TO BE A NON-SHRINK, HIGH STRENGTH GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 5000 psi. INSTALL GROUT PER MANUFACTURER'S RECOMMENDATIONS.
 3. ALL ANCHOR ROD NUTS (TOP AND LEVELING NUTS) SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION. TOP NUTS SHALL BE ROTATED, WITH THE LEVELING NUT SECURED AN ADDITIONAL 1/3 TURN FOR ANCHOR RODS 1 1/2" [38 mm] OR LESS IN DIAMETER AND AN ADDITIONAL 1/6 TURN FOR ANCHOR ROD DIAMETERS GREATER THAN 1 1/2" [38 mm].

ELEVATION VIEW

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		MATERIAL: TOLERANCES DO NOT APPLY TO RAW MATERIAL	Sabre Industries Towers and Poles		TOWER BASE INSTALLATION (S3R & S4R)						
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REV		DATE	DESCRIPTION	DRAWN BY	MLC	CHECKED BY	DLW	SCALE	Note	PAGE	1 OF 1



ELEVATION VIEW

(6) 1 1/2" # ANCHOR BOLTS ON A 10 1/4" # BOLT CIRCLE

LIST OF MATERIAL

08-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	08-T1181241	SECT. 8 LEG 4 1/2" # X 20'-0 5/16 W/STEP BOLTS	3953
TOTAL WEIGHT LBS				3953

08-T8300081 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02614	ANGLE, DIAGONAL 3 X 3 X 1/4 X 17'-2 3/4	527
3	6	TS02615	ANGLE, DIAGONAL 3 X 3 X 1/4 X 16'-8 9/16	511
4	6	TS02616	ANGLE, DIAGONAL 3 X 3 X 1/4 X 16'-2 1/2	496
TOTAL WEIGHT LBS				1534

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026115	BOLT ASSEMBLY, 1 1/2" # X 6 1/2 A325	115
TOTAL WEIGHT LBS				115

TK00261 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026045	BOLT ASSEMBLY, 3/4" # X 2 1/2 A325	8
7	38	C40026044	BOLT ASSEMBLY, 3/4" # X 2 1/4 A325	28
8	10	C40047009	RINGFILL, 1/2 THICK - 3/4" # BOLT	2
TOTAL WEIGHT LBS				38

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT 5640

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

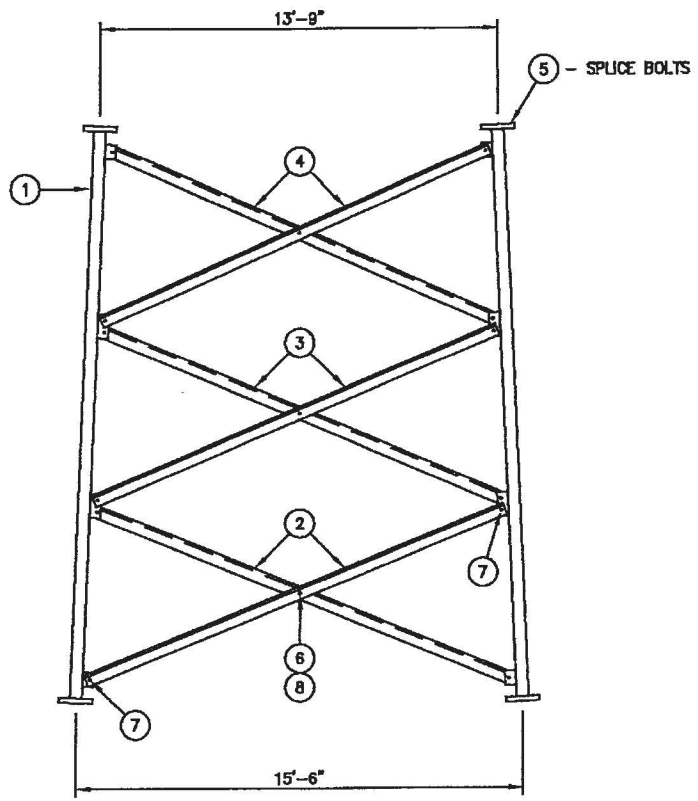
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:	
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL.	
REV	DATE	DRW/CHK	DESCRIPTION



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SECTION ERECTION: 08 08-T8300081
SITE: HALLSVILLE, MO
CUSTOMER: BOONE COUNTY, MO

JOB NO. 414025	SIZE B	DRAWING NO. 414025-S08	REV 0
DATE 08/25/18	DRAWN BY DLK	CHECKED BY KD ✓	SCALE NONE
		PAGE 1 OF 1	



ELEVATION VIEW

LIST OF MATERIAL

07-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	07-T1181039	SECT. 7 LEG 4 1/4" X 20'-0 5/16 W/STEP BOLTS	3511
TOTAL WEIGHT LBS				3511

07-T8300071 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02584	ANGLE, DIAGONAL 3 X 3 X 1/4 X 15'-8 1/16	479
3	6	TS02585	ANGLE, DIAGONAL 3 X 3 X 1/4 X 15'-2 1/16	464
4	6	TS02586	ANGLE, DIAGONAL 3 X 3 X 1/4 X 14'-8	449
TOTAL WEIGHT LBS				1392

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026094	BOLT ASSEMBLY, 1 1/4" X 5 1/2 A325	69
TOTAL WEIGHT LBS				69

TK00261 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026045	BOLT ASSEMBLY, 3/4" X 2 1/2 A325	8
7	38	C40026044	BOLT ASSEMBLY, 3/4" X 2 1/4 A325	28
8	10	C40047009	RINGFILL, 1/2 THICK - 3/4" BOLT	2
TOTAL WEIGHT LBS				38

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT 5010

FIELD NOTES

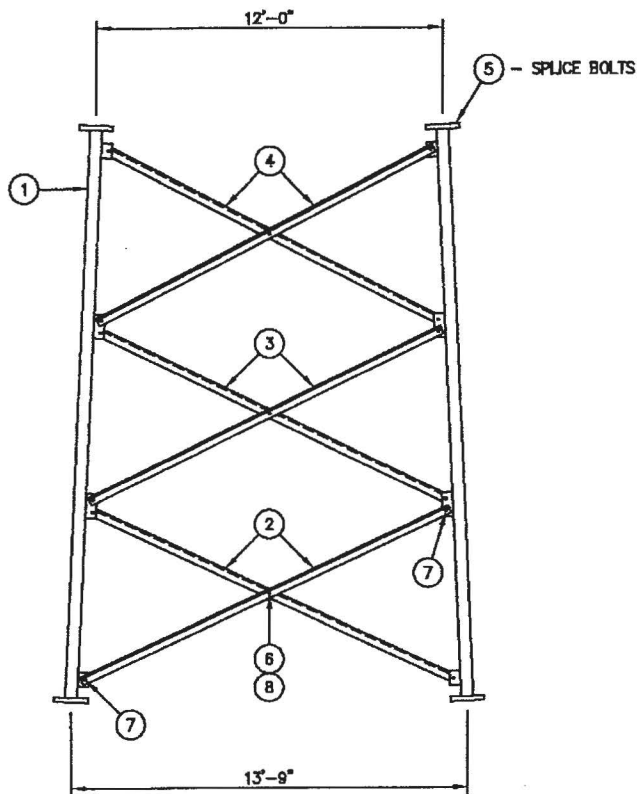
1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:	
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL.	
REV	DATE	DRW/CHK	DESCRIPTION



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SECTION ERECTION: 07 07-T8300071			
SITE: HALLSVILLE, MO			
CUSTOMER: BOONE COUNTY, MO			
JOB NO. 414025	SIZE B	DRAWING NO. 414025-S07	REV 0
DATE 08/25/18	DRW BY DLK	CHECKED BY KD	SCALE NONE
		PAGE 1 OF 1	



ELEVATION VIEW

LIST OF MATERIAL

06-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	06-T1181038	SECT. 6 LEG 4 1/4" x 20'-0 5/16"	3409
TOTAL WEIGHT LBS				3409

06-T8300064 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02563	ANGLE, DIAGONAL 3 X 3 X 3/16 X 14'-0 7/8"	326
3	6	TS02564	ANGLE, DIAGONAL 3 X 3 X 3/16 X 13'-6 15/16"	314
4	6	TS02565	ANGLE, DIAGONAL 3 X 3 X 3/16 X 13'-1 1/16"	303
TOTAL WEIGHT LBS				943

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026094	BOLT ASSEMBLY, 1 1/4" x 5 1/2" A325	69
TOTAL WEIGHT LBS				69

TK00260 HARDWARE KIT

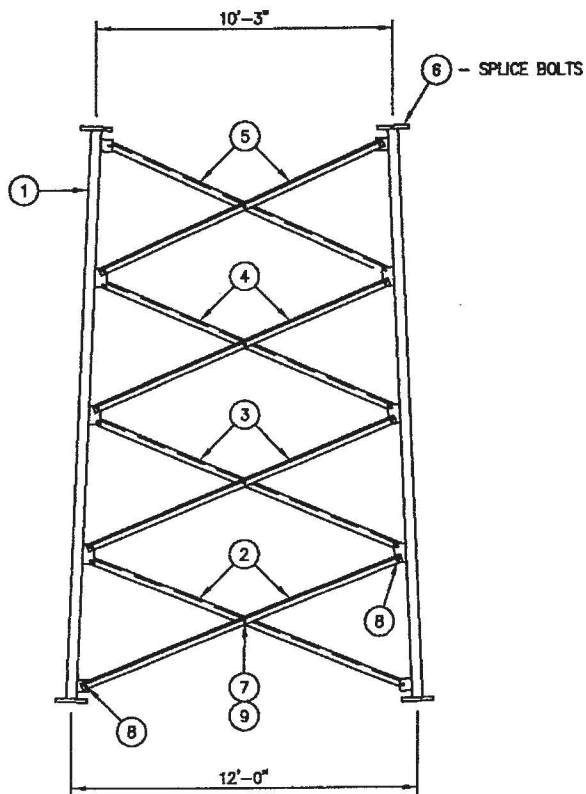
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026044	BOLT ASSEMBLY, 3/4" x 2 1/4" A325	7
7	38	C40026043	BOLT ASSEMBLY, 3/4" x 2" A325	27
8	10	C40047009	RINGFILL, 1/2" THICK - 3/4" BOLT	2
TOTAL WEIGHT LBS				36

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT 4457

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS NOT PROVIDED FOR LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:				SECTION ERECTION: 06 06-T8300064						
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL.				SITE: HALLSVILLE, MO						
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REV	DATE	DRW/CHK	DESCRIPTION	JOB NO. 414025	SIZE B	DRAWING NO. 414025-S06	REV 0	DATE 08/25/18	DRAWN BY DLK	CHECKED BY KD ✓	SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

05-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	05-T1180944	SECT. 5 LEG 3 3/4" X 20'-0 5/16"	2735
TOTAL WEIGHT LBS				2735

05-T8300059 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02545	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 11'-10 15/16"	229
3	6	TS02546	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 11'-6 1/4"	221
4	6	TS02547	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 11'-1 5/8"	214
5	6	TS02548	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 10'-9"	206
TOTAL WEIGHT LBS				870

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	19	C40026094	BOLT ASSEMBLY, 1 1/4" X 5 1/2" A325	69
TOTAL WEIGHT LBS				69

TK00194 HARDWARE KIT

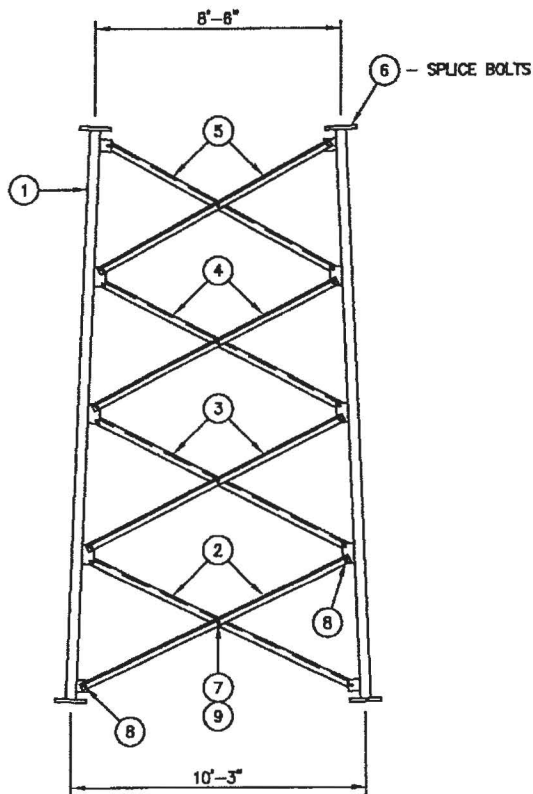
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	13	C40026023	BOLT ASSEMBLY, 5/8" X 2" A325	6
8	50	C40026022	BOLT ASSEMBLY, 5/8" X 1 3/4" A325	22
9	13	C40047003	RINGFILL, 3/8" THICK - 5/8" BOLT	2
TOTAL WEIGHT LBS				30

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT 3704

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS NOT PROVIDED FOR LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:	Sabre Industries Towers and Poles	SECTION ERECTION: 05 05-T8300059			
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL		SITE: HALLSVILLE, MO			
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REV	DATE	DRW/CHK		DESCRIPTION	JOB NO. 414025	SIZE B	DRAWING NO. 414025-S05
				DATE 09/25/18			
				DRAWN BY DLK		SCALE NONE	PAGE 1 OF 1
				CHECKED BY KD ✓			



ELEVATION VIEW

LIST OF MATERIAL

04-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	04-T1180940	SECT. 4 LEG 3 1/2" ø X 20'-0 5/16"	2355
TOTAL WEIGHT LBS				2355

04-T8300052 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02517	ANGLE, DIAGONAL 2 X 2 X 1/4 X 10'-3 11/16"	205
3	6	TS02518	ANGLE, DIAGONAL 2 X 2 X 1/4 X 9'-11 3/16"	198
4	6	TS02519	ANGLE, DIAGONAL 2 X 2 X 1/4 X 9'-6 11/16"	190
5	6	TS02520	ANGLE, DIAGONAL 2 X 2 X 1/4 X 9'-2 1/4"	183
TOTAL WEIGHT LBS				776

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	19	C40026080	BOLT ASSEMBLY, 1" ø X 4 3/4" A325	44
TOTAL WEIGHT LBS				44

TK00259 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	13	C40026024	BOLT ASSEMBLY, 5/8" ø X 2 1/4" A325	7
8	50	C40026023	BOLT ASSEMBLY, 5/8" ø X 2" A325	23
9	13	C40047003	RINGFILL, 3/8" THICK - 5/8" ø BOLT	2
TOTAL WEIGHT LBS				32

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT 3207

FIELD NOTES

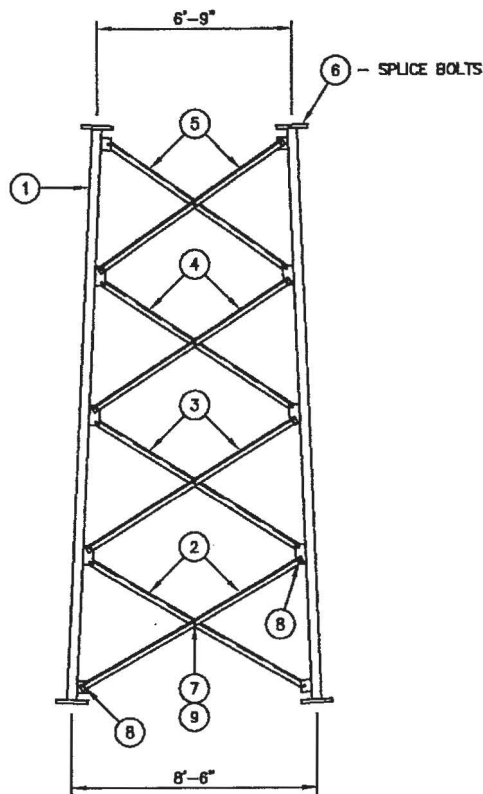
1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS NOT PROVIDED FOR LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL
REV	DATE	DESCRIPTION

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SECTION ERECTION: 04 04-T8300052			
SITE: HALLSVILLE, MO			
CUSTOMER: BOONE COUNTY, MO			
JOB NO. 414025	SIZE B	DRAWING NO. 414025-S04	REV 0
DATE 09/25/18	DRAWN BY DLK	CHECKED BY KD	SCALE NONE
PAGE 1 OF 1		PAGE 1 OF 1	



ELEVATION VIEW

LIST OF MATERIAL

03-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	03-T1180838	SECT. 3 LEG 3 1/4" x 20'-0 5/16"	2017
TOTAL WEIGHT LBS				2017

03-T8300046 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02493	ANGLE, DIAGONAL 2 X 2 X 3/16 X 8'-10 1/2"	136
3	6	TS02494	ANGLE, DIAGONAL 2 X 2 X 3/16 X 8'-6 1/8"	130
4	6	TS02495	ANGLE, DIAGONAL 2 X 2 X 3/16 X 8'-1 7/8"	124
5	6	TS02496	ANGLE, DIAGONAL 2 X 2 X 3/16 X 7'-9 11/16"	119
TOTAL WEIGHT LBS				509

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	19	C40026079	BOLT ASSEMBLY, 1" x 4 1/2" A325	43
TOTAL WEIGHT LBS				43

TK00194 HARDWARE KIT

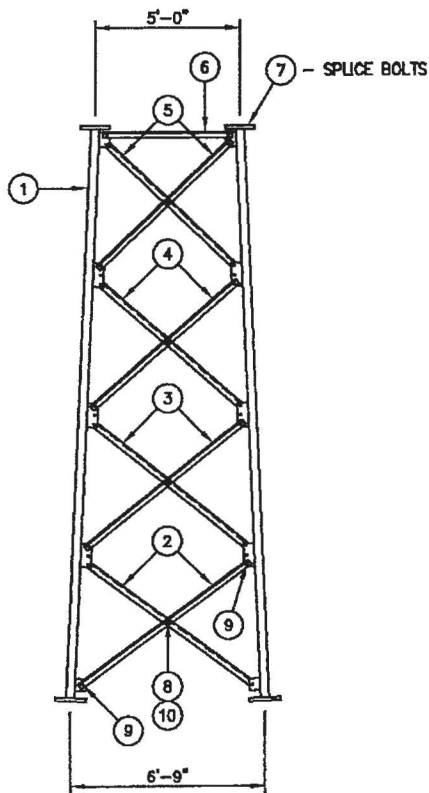
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	13	C40026023	BOLT ASSEMBLY, 5/8" x 2" A325	6
8	50	C40026022	BOLT ASSEMBLY, 5/8" x 1 3/4" A325	22
9	13	C40047003	RINGFILL, 3/8" THICK - 5/8" BOLT	2
TOTAL WEIGHT LBS				30

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT 2599

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS NOT PROVIDED FOR LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:	Sabre Industries Towers and Poles	SECTION ERECTION: 03 03-T8300046	
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL		SITE: HALLSVILLE, MO	
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REV	DATE	DRW/CHK	DESCRIPTION	JOB NO. 414025	SIZE B
				DATE 09/25/18	DRAWING NO. 414025-S03
				DRAWN BY DLK	REV 0
				CHECKED BY KD ✓	SCALE NONE
					PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

02-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	02-T1180732	SECT. 2 LEG 3 # X 20'-0 5/16	1761
TOTAL WEIGHT LBS				1761

02-T8300037 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02457	ANGLE, DIAGONAL 2 X 2 X 1/8 X 7'-4 1/8	76
3	6	TS02458	ANGLE, DIAGONAL 2 X 2 X 1/8 X 7'-0 1/8	73
4	6	TS02459	ANGLE, DIAGONAL 2 X 2 X 1/8 X 6'-8 3/16	68
5	6	TS02480	ANGLE, DIAGONAL 2 X 2 X 1/8 X 6'-4 7/16	65
6	3	TS02449	ANGLE, HORIZONTAL 2 X 2 X 1/8 X 4'-5 5/8	23
TOTAL WEIGHT LBS				305

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	19	C40028077	BOLT ASSEMBLY, 1 # X 4 A325	39
TOTAL WEIGHT LBS				39

TK00134 HARDWARE KIT

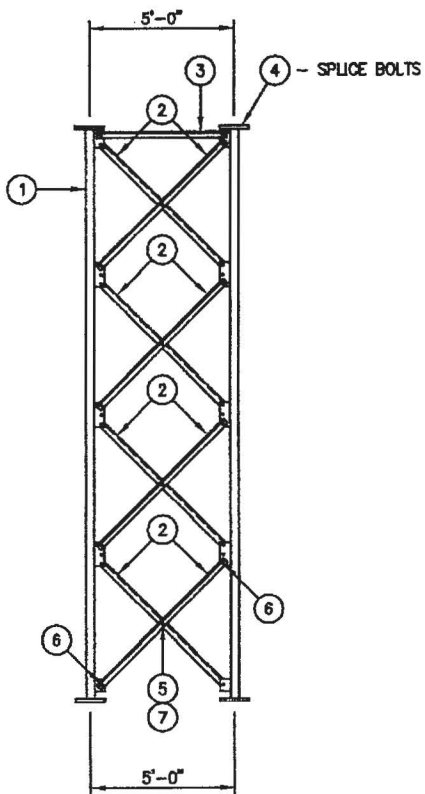
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	13	C40026023	BOLT ASSEMBLY, 5/8 # X 2 A325	6
9	57	C40026022	BOLT ASSEMBLY, 5/8 # X 1 3/4 A325	25
10	13	C40047003	RINGFILL, 3/8 THICK - 5/8 # BOLT	2
TOTAL WEIGHT LBS				33

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT 2138

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS NOT PROVIDED FOR LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARC IN INCHES TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		MATERIAL: TOLERANCES DO NOT APPLY TO RAW MATERIAL.			SECTION ERECTION: 02 02-T8300037			
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					JOB NO. 414025	SIZE: B	DRAWING NO. 414025-S02	REV: 0
REV	DATE	DRW/CHK	DESCRIPTION	DRAWN BY: DLK	CHECKED BY: KD	SCALE: NONE	PAGE: 1 OF 1	



ELEVATION VIEW

LIST OF MATERIAL

01-20-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	01-T1180622	SECT. 1 LEG 2 1/2" X 20'-0 5/16"	1258
TOTAL WEIGHT LBS				1258

01-T8300031 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	24	TS02443	ANGLE, DIAGONAL 2 X 2 X 1/4 X 6'-2 3/4"	497
3	3	TS02411	ANGLE, HORIZONTAL 2 X 2 X 1/4 X 4'-5 3/4"	45
TOTAL WEIGHT LBS				542

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	13	C40026048	BOLT ASSEMBLY, 3/4" X 3 1/4" A325	11
TOTAL WEIGHT LBS				11

TK00146 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	13	C40026024	BOLT ASSEMBLY, 5/8" X 2 1/4" A325	7
6	57	C40026023	BOLT ASSEMBLY, 5/8" X 2" A325	26
7	13	C40047003	RINGFILL, 3/8" THICK - 5/8" BOLT	2
TOTAL WEIGHT LBS				35

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT 1846

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS NOT PROVIDED FOR LEGS.

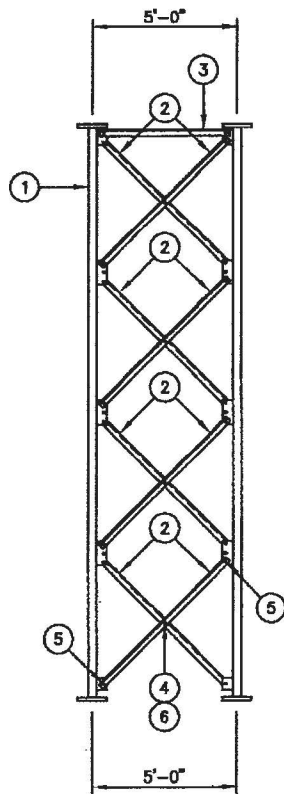
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:	
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL	
REV	DATE	DRW CHG	DESCRIPTION

Sabre Industries
Towers and Poles

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SECTION ERECTION: 01-20 01-T8300031
SITE: HALLSVILLE, MO
CUSTOMER: BOONE COUNTY, MO

JOB NO. 414025	SIZE B	DRAWING NO. 414025-S01-1	REV 0
DATE 09/25/18	DRAWN BY DLK	CHECKED BY KD	SCALE NONE
PAGE 1 OF 1			



ELEVATION VIEW

LIST OF MATERIAL

01-20-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	01-T1180608	SECT. 1 LEG 2 # X 20'-0 5/16	852
TOTAL WEIGHT LBS				852

01-T8300029 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	24	TS02441	ANGLE, DIAGONAL 2 X 2 X 1/8 X 6'-2 3/4	257
3	3	TS02409	ANGLE, HORIZONTAL 2 X 2 X 1/8 X 4'-5 3/4	23
TOTAL WEIGHT LBS				280

TK00134 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	13	C40026023	BOLT ASSEMBLY, 5/8 # X 2 A325	6
5	57	C40026022	BOLT ASSEMBLY, 5/8 # X 1 3/4 A325	25
6	13	C40047003	RINGFILL, 3/8 THICK - 5/8 # BOLT	2
TOTAL WEIGHT LBS				33

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT

1165

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS NOT PROVIDED FOR LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS $\pm 1/16"$
ANGLES $\pm 1/2$ DEG.
DECIMALS $\pm .010"$

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

Sabre Industries
Towers and Poles

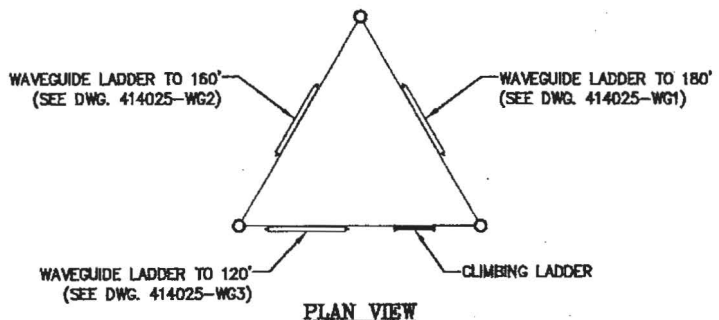
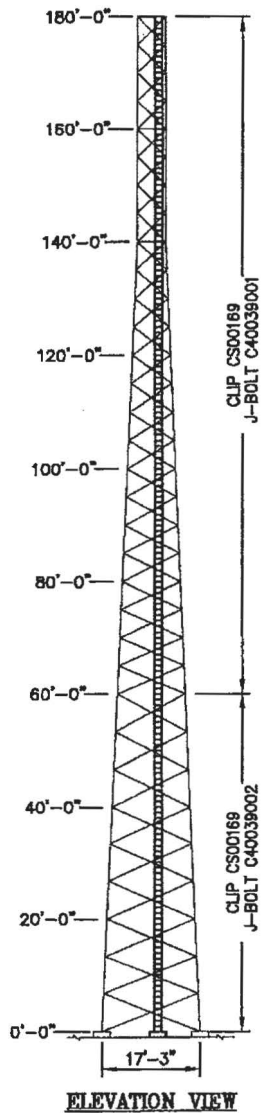
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SECTION ERECTION: 01-20 01-T8300029

SITE: HALLSVILLE, MO

CUSTOMER: BOONE COUNTY, MO

JOB NO. 414025	SIZE B	DRAWING NO. 414025-S01-2	REV 0
DATE 08/25/18	DRAWN BY DLK	CHECKED BY KD ✓	SCALE NONE
PAGE 1 OF 1			



CLIMBING LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	9	CW00118	WELDMENT, 20 FT. CLIMBING LADDER 16" WIDE	855
2	16	CS00037	PLATE, LADDER SPLICE	6
3	2	CS00242	ANGLE, LADDER BASE SUPPORT	15
4	42	CS00169	CLIP, LADDER ATTACHMENT	23
TOTAL WEIGHT LBS				899

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	18	C40039002	J-BOLT ASSEMBLY, 3/8" x 7 1/4 I.L.	6
6	24	C40039001	J-BOLT ASSEMBLY, 3/8" x 5 3/4 I.L.	7
7	34	C40024004	BOLT ASSEMBLY, 3/8" x 1 1/2 GRD 5	3
8	96	C40044002	STEP BOLT ASSEMBLY, 5/8" x 7 H.D.G.	96
TOTAL WEIGHT LBS				112

FIELD NOTES

1. FROM ELEVATION 0'-0" TO 60'-0" ATTACH LADDER TO EACH DIAGONAL. FROM ELEVATION 60'-0" TO 180'-0" ATTACH LADDER TO EVERY OTHER DIAGONAL.
2. SEE REFERENCE DWG. 9029450 FOR CLIMBING LADDER INSTALLATION FROM ELEVATION 0'-0" TO 180'-0".
3. SEE REFERENCE DWG. 9031527 FOR CLIMBING LADDER BASE INSTALLATION.
4. SEE REFERENCE DWG. 900219 FOR CONSTRUCTION STEP BOLT INSTALLATION FROM ELEVATION 0'-0" TO 40'-0".
5. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.

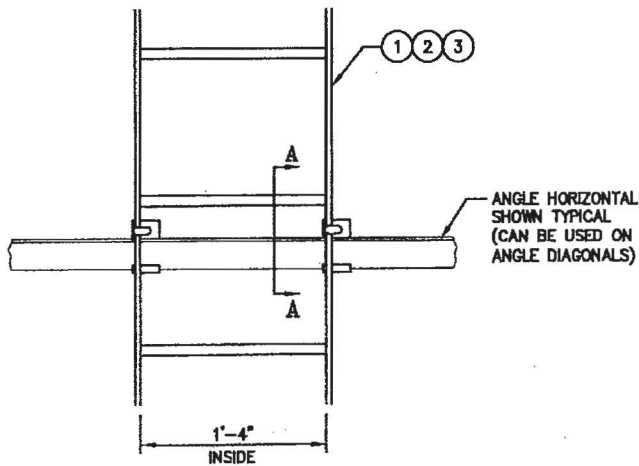
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:	
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL	
REV	DATE	BY	DESCRIPTION

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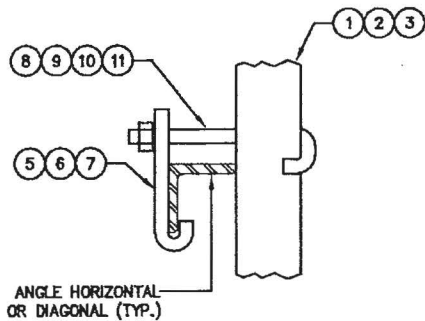
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CLIMBING LADDER: 180 FT. MODEL SSR-SD			
SITE: HALLSVILLE, MO			
CUSTOMER: BOONE COUNTY, MO			
JOB NO. 414025	SIZE /B	DRAWING NO. 414025-CL1	REV 0
DATE 09/28/18	DRAWN BY DLK	SCALE NONE	PAGE 1 OF 1
CHECKED BY ZAK			



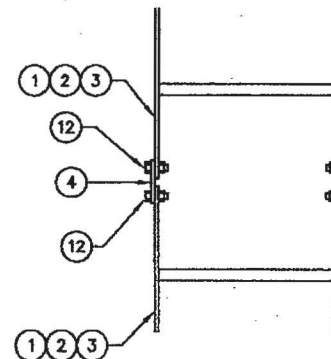
ELEVATION
(TYPICAL MOUNTING DETAIL)



SECTION A-A

ANGLE HORIZONTAL
SHOWN TYPICAL
(CAN BE USED ON
ANGLE DIAGONALS)

NOTE:
MAXIMUM SPACING OF LADDER CLIPS
UP THE TOWER TO BE $\pm 10''-0''$.



SPLICE DETAIL

LIST OF MATERIAL

ITEM	QTY	PART NO.	DESCRIPTION	WEIGHT
1.	A/R	CW00118	WELDMENT, 20 FT CLIMBING LADDER	
2.	A/R	CW00206	WELDMENT, 10 FT CLIMBING LADDER	
3.	A/R	CW00207	WELDMENT, 5 FT CLIMBING LADDER	
4.	A/R	CS00037	PLATE, LADDER SPLICE	
5.	A/R	CS00169	CLIP, LADDER ATTACHMENT (1 1/2" - 4" ANGLES)	
6.	A/R	CS00170	CLIP, LADDER ATTACHMENT (5" - 6" ANGLES)	
7.	A/R	CS00808	CLIP, LADDER ATTACHMENT (5" - 6" ANGLES; 1/2" TO 3/4" THK)	
8.	A/R	C40039001	J-BOLT ASSY., 3/8 (1 1/2" - 2 1/2" ANGLES)	
9.	A/R	C40039002	J-BOLT ASSY., 3/8 (3" - 4" ANGLES)	
10.	A/R	C40039003	J-BOLT ASSY., 3/8 (5" - 6" ANGLES)	
11.	A/R	C40039009	J-BOLT ASSY., 3/8 (3" - 6" ANGLES; 1/2" TO 3/4" THK)	
12.	A/R	C40024004	BOLT ASSEMBLY, 3/8 X 1 1/2 GR5	
				TOTAL WEIGHT

"SEE JOB SPECIFIC BILL OF MATERIAL FOR QTY'S."

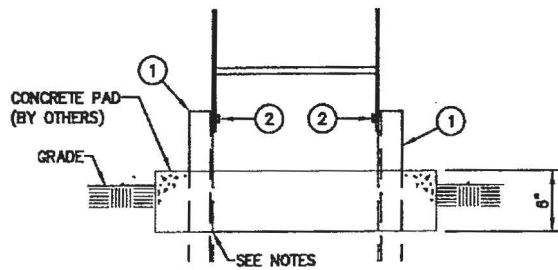
REV	DATE	DRW/CHK	DESCRIPTION
1	1/21/09		ADD 5 FT CLIMBING LADDER
2	8/24/09		REVISION TO SECTION A-A
3	2/10/08		ADD 10 FT CLIMBING LADDER

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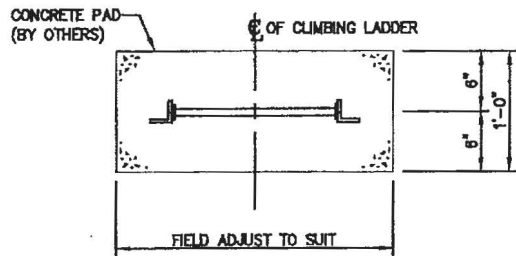
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TYPICAL CLIMBING LADDER INSTALLATION
(STANDARD 16" WIDE LADDER)

DATE	8/22/05	SIZE	B	DRAWING NO.	9029450	REV	3	
DRAWN BY	KMM	SCALE	None	PAGE	1 OF 1			
CHECKED BY	CHH							



ELEVATION VIEW
(LADDER BASE ELEVATION)



PLAN VIEW
(LADDER BASE PLAN)

LIST OF MATERIAL				
ITEM	QTY	PART NO.	DESCRIPTION	WEIGHT
1.	A/R	CS00242	ANGLE, LADDER BASE SUPPORT	
2.	A/R	C40024004	BOLT ASSEMBLY, 3/8 X 1 1/2 GR5	
TOTAL WEIGHT				

NOTE:

1. SUPPORT ANGLES MAY BE CUT IN FIELD TO PREVENT PROTRUDING THROUGH THE BOTTOM OF THE CONCRETE BLOCK.
2. THE BEARING MATERIAL BENEATH THE CONCRETE SHALL CONSIST OF NON-EXPANSIVE AND NON-FROST SUSCEPTIBLE (NFS) MATERIAL.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

Sabre Industries
Towers and Poles

**LADDER BASE INSTALLATION FOR
SELF-SUPPORTING TOWERS**

REV	DATE	DRW/CHK	DESCRIPTION

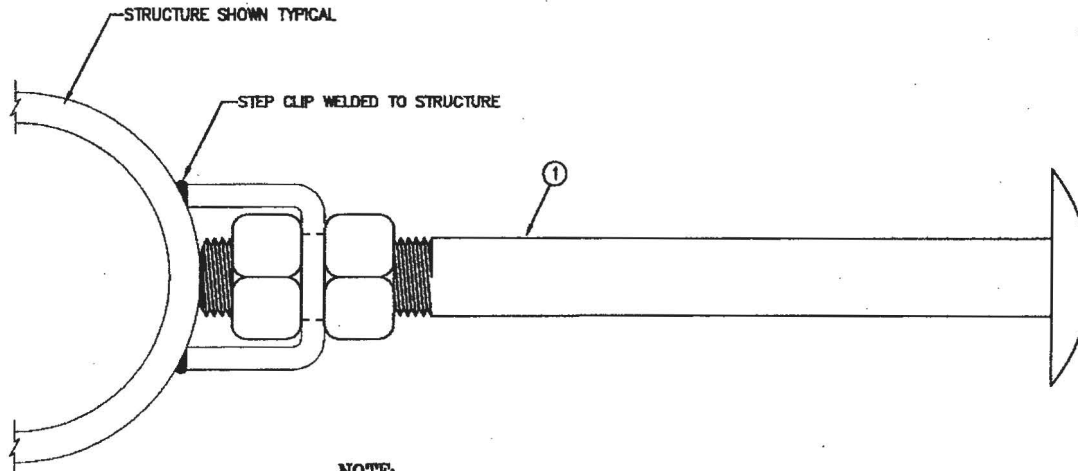
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DATE	03/02/18	SIZE	B	DRAWING NO.	9031527	REV	0
DRAWN BY	LRS	SCALE	None	PAGE		1 OF 1	
CHECKED BY	KLE						

LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	A/R	C40044002	STEP BOLT ASSEMBLY, 5/8 X 7	



NOTE:

STEP BOLTS PROVIDED FOR CONSTRUCTION PURPOSES ARE FOR EXPERIENCED TOWER ERECTORS ONLY AND SHOULD NEVER BE USED WITHOUT PROPER SAFETY EQUIPMENT. FOR STEP BOLTS SUPPLIED AS A FORM OF CLIMBING IN TYPICAL COMMUNICATION ACTIVITY, SABRE INDUSTRIES RECOMMENDS A FALL PROTECTION PLAN BE COMPLETED BY A COMPETENT PERSON AND FOLLOWED FOR EACH CLIMB.

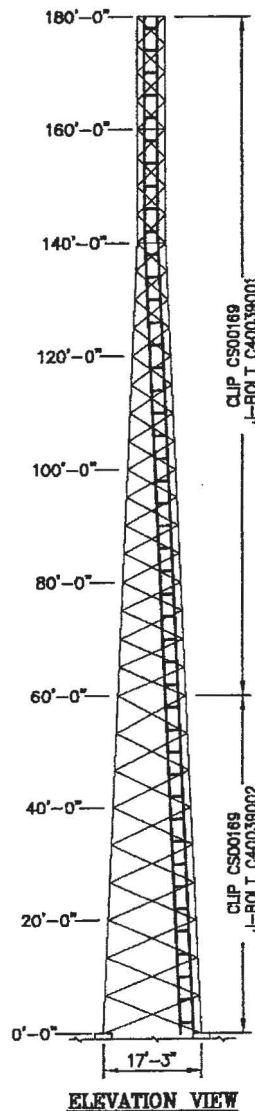
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:	
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL.	
REV	DATE	BY	DESCRIPTION

Sabre Industries
Towers and Poles

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STEP BOLT ATTACHMENT INSTALLATION

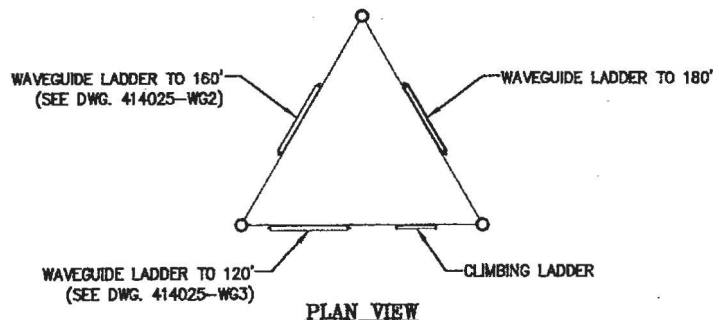
DATE	4/21/82	SIZE	B	DRAWING NO.	900219	REV	7
DRAWN BY	DPB	SCALE	None	PAGE	1	OF 1	
CHECKED BY	WHO						



ELEVATION VIEW

WAVEGUIDE LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	18	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540
2	45	CS00413	ANGLE, WAVEGUIDE SUPPORT (15 HOLE)	207
3	16	CS00037	PLATE, LADDER SPLICE	6
4	42	CS00169	CLIP, LADDER ATTACHMENT	23
TOTAL WEIGHT LBS				776

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	18	C40039002	J-BOLT ASSEMBLY, 3/8" # X 7 1/4 LL	6
6	24	C40039001	J-BOLT ASSEMBLY, 3/8" # X 5 3/4 LL	7
7	122	C40024004	BOLT ASSEMBLY, 3/8" # X 1 1/2 GRD 5	12
TOTAL WEIGHT LBS				25



FIELD NOTES

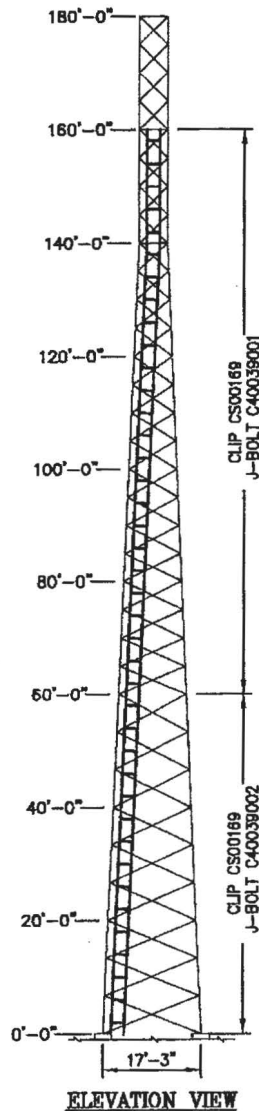
1. FROM ELEVATION 0'-0" TO 80'-0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL. FROM ELEVATION 80'-0" TO 180'-0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9028851 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS ARE NEVER TO BE USED AS A CLIMBING DEVICE.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:	
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL.	
REV	DATE	DRW/CHK	DESCRIPTION

Sabre Industries
Towers and Poles

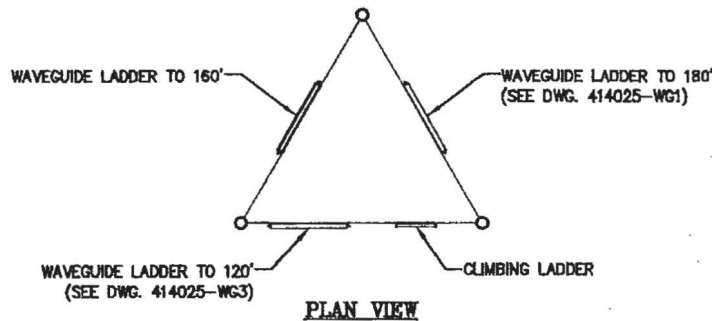
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W/G LADDER: 180 FT. MODEL S3R-SD			
SITE: HALLSVILLE, MO			
CUSTOMER: BOONE COUNTY, MO			
JOB NO. 414025	SIZE B	DRAWING NO. 414025-WG1	REV 0
DATE 08/25/18	DRWN BY DLK	CHECKED BY ZAK	SCALE NONE PAGE 1 OF 1



WAVEGUIDE LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	16	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	480
2	40	CS00413	ANGLE, WAVEGUIDE SUPPORT (15 HOLE)	184
3	14	CS00037	PLATE, LADDER SPLICE	6
4	38	CS00169	CLIP, LADDER ATTACHMENT	21
TOTAL WEIGHT LBS				691

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	18	C40039002	J-BOLT ASSEMBLY, 3/8" x 7 1/4 I.L.	6
6	20	C40039001	J-BOLT ASSEMBLY, 3/8" x 5 3/4 I.L.	6
7	108	C40024004	BOLT ASSEMBLY, 3/8" x 1 1/2 GRD 5	11
TOTAL WEIGHT LBS				23



FIELD NOTES

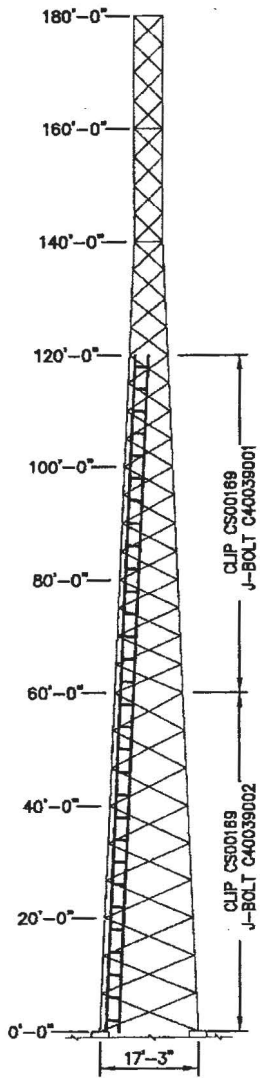
1. FROM ELEVATION 0'-0" TO 60'-0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL. FROM ELEVATION 60'-0" TO 180'-0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9028851 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS ARE NEVER TO BE USED AS A CLIMBING DEVICE.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:	
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL.	
REV	DATE	BY	DESCRIPTION

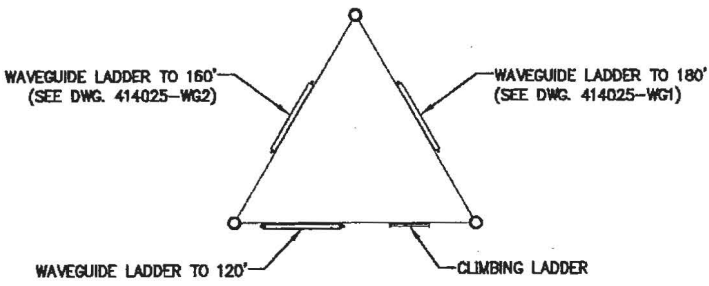
Sabre Industries[®]
Towers and Poles

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W/G LADDER: 180 FT. MODEL SSR-SD			
SITE: HALLSVILLE, MO			
CUSTOMER: BOONE COUNTY, MO			
JOB NO. 414025	SIZE B	DRAWING NO. 414025-WG2	REV 0
DATE 08/25/18	DRAWN BY DLK	CHECKED BY ZAK	SCALE NONE PAGE 1 OF 1



ELEVATION VIEW



PLAN VIEW

FIELD NOTES

1. FROM ELEVATION 0'-0" TO 60'-0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
FROM ELEVATION 60'-0" TO 120'-0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9028851 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS ARE NEVER TO BE USED AS A CLIMBING DEVICE.

WAVEGUIDE LADDER

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	12	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	360
2	30	CS00413	ANGLE, WAVEGUIDE SUPPORT (15 HOLE)	138
3	10	CS00037	PLATE, LADDER SPLICE	4
4	30	CS00169	CLIP, LADDER ATTACHMENT	17
TOTAL WEIGHT LBS				519

LADDER HARDWARE

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	18	C40039002	J-BOLT ASSEMBLY, 3/8" ϕ X 7 1/4 I.L.	6
6	12	C40039001	J-BOLT ASSEMBLY, 3/8" ϕ X 5 3/4 I.L.	4
7	80	C40024004	BOLT ASSEMBLY, 3/8" ϕ X 1 1/2 GRD 5	8
TOTAL WEIGHT LBS				18

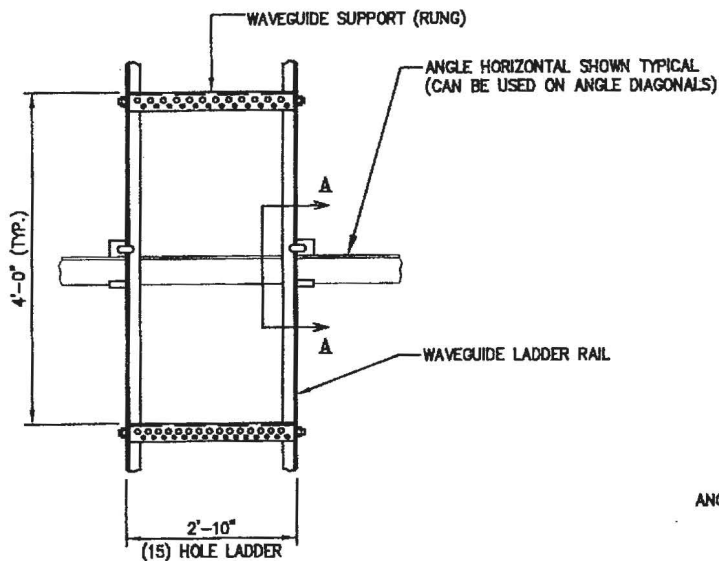
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:
TOLERANCES: FRACTIONS $\pm 1/16"$ ANGLES $\pm 1/2$ DEG. DECIMALS $\pm .010"$		TOLERANCES DO NOT APPLY TO RHW MATERIAL.
REV	DATE	DESCRIPTION

Sabre Industries
Towers and Poles

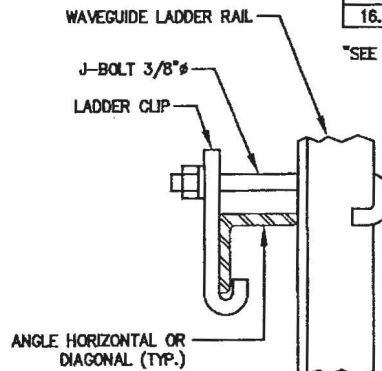
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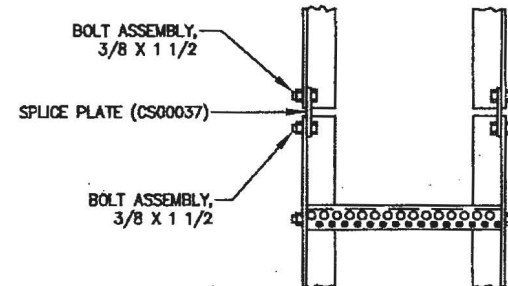
W/G LADDER: 180 FT. MODEL S3R-SD			
SITE: HALLSVILLE, MO			
CUSTOMER: BOONE COUNTY, MO			
JOB NO. 414025	SIZE	DRAWING NO.	REV
DATE 09/25/18	B	414025-WG3	0
DRAWN BY DLK	CHECKED BY ZAK	SCALE NONE	PAGE 1 OF 1



ELEVATION
(TYPICAL MOUNTING DETAIL)



SECTION A-A



SPlice DETAIL

LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	A/R	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT.	
2.	A/R	CS00148	ANGLE, WAVEGUIDE LADDER RAIL 10 FT.	
3.	A/R	CS00149	ANGLE, WAVEGUIDE LADDER RAIL 5 FT.	
4.	A/R	CS00037	PLATE, LADDER SPLICE	
5.	A/R	CS00413	ANGLE WAVEGUIDE SUPPORT (15 HOLE)	
6.	A/R	CS00169	CLIP, LADDER ATTACHMENT (1 1/2" - 4" ANGLES)	
7.	A/R	CS00170	CLIP, LADDER ATTACHMENT (5" - 6" ANGLES)	
8.	A/R	CS00171	CLIP, LADDER ATTACHMENT (1 1/2" - 6" ANGLES; 1/2" THK. & UNDER)	
9.	A/R	CS00808	CLIP, LADDER ATTACHMENT (4" - 6" ANGLES; 1/2" TO 3/4" THK.)	
10.	A/R	CS01212	CLIP, LADDER ATTACHMENT (8" ANGLES)	
11.	A/R	C40039001	J-BOLT ASSY., 3/8 (1 1/2" - 2 1/2" ANGLES)	
12.	A/R	C40039002	J-BOLT ASSY., 3/8 (3" - 4" ANGLES)	
13.	A/R	C40039003	J-BOLT ASSY., 3/8 (5" - 6" ANGLES)	
14.	A/R	C40024004	BOLT ASSEMBLY, 3/8 X 1 1/2 GR5	
15.	A/R	C40039009	J-BOLT ASSY., 3/8 (5" - 6" ANGLES; 1/2" & 3/4" THK)	
16.	A/R	C40039012	J-BOLT ASSY., 3/8 (8" ANGLES; 1/2" & 3/4" THK)	
				TOTAL WEIGHT

"SEE JOB SPECIFIC BILL OF MATERIAL FOR QTY'S."

NOTE:
MAXIMUM SPACING OF LADDER CLIPS
UP THE TOWER TO BE ±10'-0".

REV	DATE	BY	CHK	DESCRIPTION
1	4/25/18	CHH	ZAK	ISSUE FOR CONSTRUCTION
2	11/23/17	CHH	ZAK	ISSUE FOR CONSTRUCTION
3	11/28/15	CHH	ZAK	ISSUE FOR CONSTRUCTION

Sabre Industries
Towers and Poles

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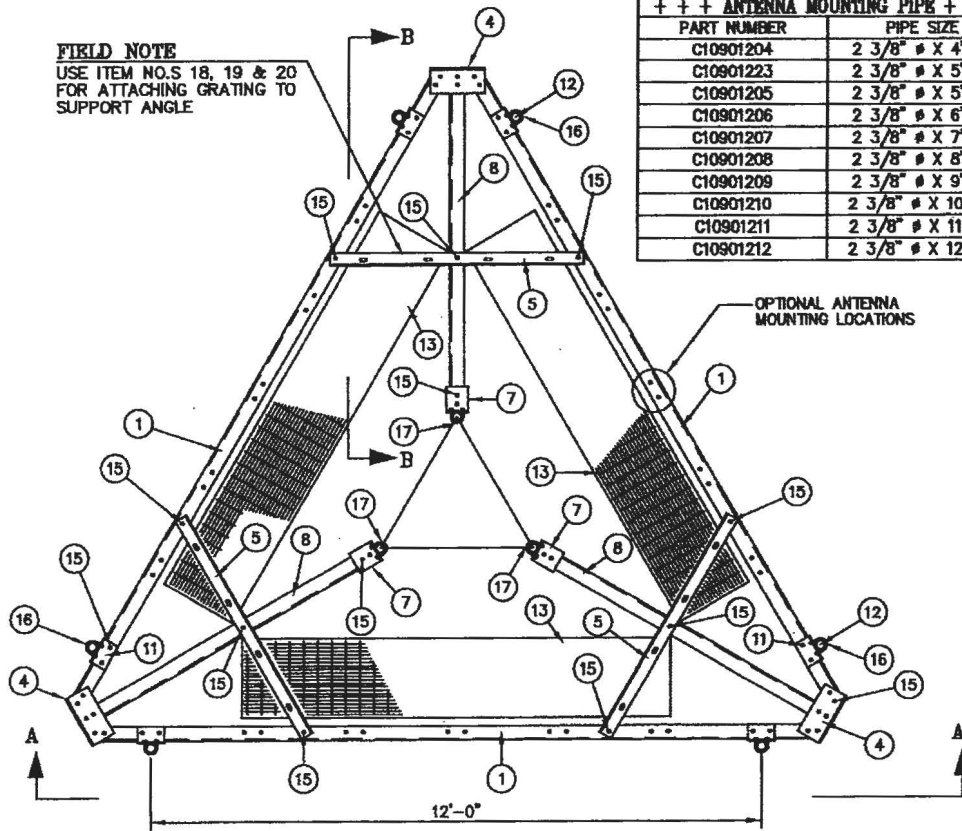
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TYPICAL WAVEGUIDE LADDER INSTALLATION 15 HOLE RUNG - 7/16"φ & 3/4"φ			
DATE	SIZE	DRAWING NO.	REV
5/22/03	B	9028851	3
DRAWN BY CHH		SCALE None	PAGE 1 OF 1
CHECKED BY ZAK			

FIELD NOTE

USE ITEM NO.S 18, 19 & 20 FOR ATTACHING GRATING TO SUPPORT ANGLE



PLAN VIEW

SEE SHEET 2 OF 2 FOR SECTIONS "A-A" & "B-B".

NOTES:

1. THE MOUNTING ARRANGEMENT OF THE MOUNTS SHOWN ON THE PLAN VIEW ARE TYPICAL ONLY, AND MAY HAVE TO BE ALTERED AT THE TIME OF INSTALLATION TO FIT THE ACTUAL REQUIREMENTS.
2. TOTAL APPROXIMATE WEIGHT: 1996 LBS. (GALV.)

+++ ANTENNA MOUNTING PIPE +++

PART NUMBER	PIPE SIZE
C10901204	2 3/8" # X 4'-0"
C10901223	2 3/8" # X 5'-0"
C10901205	2 3/8" # X 5'-3"
C10901206	2 3/8" # X 6'-0"
C10901207	2 3/8" # X 7'-0"
C10901208	2 3/8" # X 8'-6"
C10901209	2 3/8" # X 9'-0"
C10901210	2 3/8" # X 10'-6"
C10901211	2 3/8" # X 11'-0"
C10901212	2 3/8" # X 12'-0"

CK00015 ROTATABLE PLATFORM ANGLE KIT				
ITEM	QTY.	DWG. NO.	DESCRIPTION	PART NO.
1.	3	CS00321	ANGLE, TOP CHORD	CS00321
2.	3	CS00322	ANGLE, BOTTOM CHORD	CS00322
3.	18	CS00323	ANGLE, DIAGONAL	CS00323
4.	6	CS00320	ANGLE, CORNER SUPPORT (SHORT)	CS00320
5.	6	CS00324	ANGLE, CORNER SUPPORT (LONG)	CS00324
6.	9	CS00319	ANGLE, VERTICAL (BOOM)	CS00319

TOWER LEG CONNECTION MATERIAL				
ITEM	QTY.	DWG. NO.	DESCRIPTION	PART NO.
7.	6	CS00306	ANGLE, LEG MOUNT 2" #	CS00306

CK00048 MISCELLANEOUS FRAMING MATERIAL				
ITEM	QTY.	DWG. NO.	DESCRIPTION	PART NO.
8.	3	CS00312	ANGLE, TOP CHORD (BOOM)	CS00312
9.	3	CS00315	ANGLE, BOTTOM CHORD (BOOM)	CS00315
10.	6	CS00318	ANGLE, DIAGONAL (BOOM)	CS00318

ANTENNA MOUNTING PIPE				
ITEM	QTY.	DWG. NO.	DESCRIPTION	PART NO.
11.	12	CS00265	ANGLE, PIPE MOUNT	CS00265
12.	6	C109012	ANTENNA MTG. PIPE, 2 3/8" # X (LENGTH VARIES)	+++

PLATFORM GRATING				
ITEM	QTY.	DWG. NO.	DESCRIPTION	PART NO.
13.	3	C20137005	PLATFORM GRATING	C20137005

HARDWARE				
ITEM	QTY.	DWG. NO.	DESCRIPTION	PART NO.
14.	66	---	BOLT ASSEMBLY, 5/8 # X 1 3/4 A325	C40026022
15.	90	---	BOLT ASSEMBLY, 5/8 # X 2 A325	C40026023
16.	12	C40034-3	U-BOLT ASSEMBLY 5/8 X 3 1/16 C/C	C40034023
17.	12	C40034-3	U-BOLT ASSEMBLY 5/8 X 2 11/16 C/C	C40034022
18.	12	---	BOLT ASSEMBLY, 3/8 # X 3 3/4 GRD 5	C40024013
19.	12	---	FLATWASHER, 3/8	C40031001
20.	12	---	FENDER WASHER, 3/8 X 1 1/2 X .097	C40048001

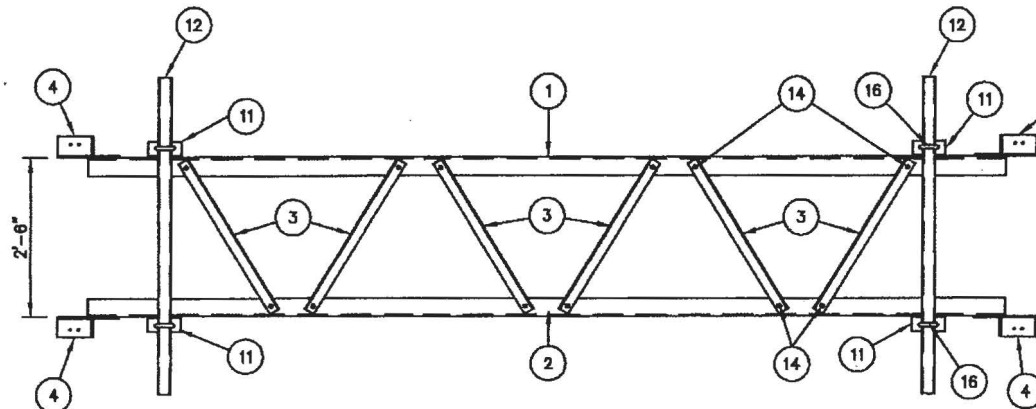
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES	MATERIAL: FITS 2" O.D. LEG 5'-0" C/C LEG			
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .015"	TOLERANCES DO NOT APPLY TO RAW MATERIAL			
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries
Towers and Poles

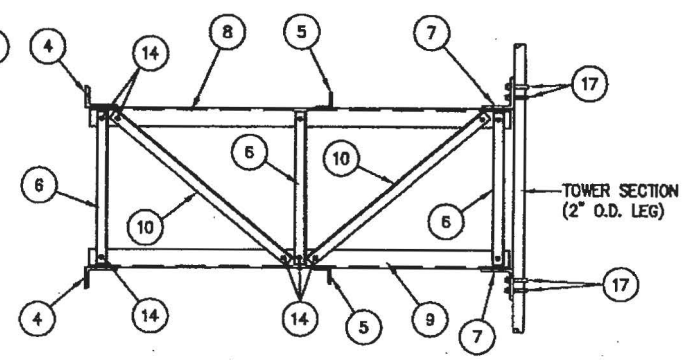
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INSTALLATION DETAIL FOR ANTENNA MOUNTING FRAME WITH GRATING (2 PIPE)

DATE	3/30/17	SIZE	B	DRAWING NO.	9031598	REV	0
DRAWN BY	DJB	SCALE	None	PAGE	1 OF 2		
CHECKED BY	ZAK						



SECTION A-A



SECTION B-B

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL: FITS 2" O.D. LEG 5'-0" C/C LEG	
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL	
REV	DATE	BY	DESCRIPTION



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INSTALLATION DETAIL FOR ANTENNA MOUNTING FRAME WITH GRATING (2 PIPE)			
DATE	3/30/17	SIZE	B
DRAWN BY	D-B	DRAWING NO.	9031598
CHECKED BY	ZAK	REV	0
		SCALE	None
		PAGE	2 OF 2



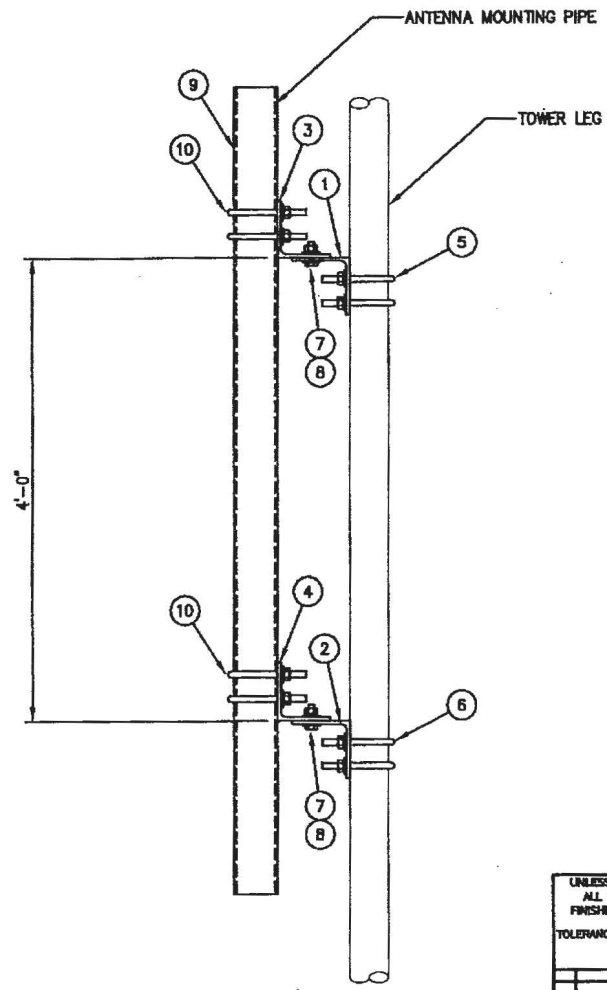
LIST OF MATERIALS FOR STRAIGHT LEG PIPE MOUNT KIT C10173008

ITEM	QTY	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2" LEG	15
2.	1	CS00216	BOTTOM LEG MOUNT FOR 2" LEG	15
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2" PIPE	15
4.	1	CS00214	BOTTOM PIPE MOUNT FOR 4 1/2" PIPE	15
5.	2	C40034022	U-BOLT ASSEMBLY 5/8" X 2 11/16 C-C (TOP LEG MOUNT)	3
6.	2	C40034022	U-BOLT ASSEMBLY 5/8" X 2 11/16 C-C (BOTTOM LEG MOUNT)	3
7.	4	C40026024	BOLT ASSEMBLY, 5/8" X 2 1/4" A325	2
8.	8	C40031003	FLATWASHER, 5/8" (F436)	1
KIT WEIGHT LBS				69

LIST OF ADDITIONAL MATERIALS

ITEM	QTY	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10881407	ANTENNA MTG. PIPE 4 1/2" X 7'-0"	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8" X 5 3/16 C-C (PIPE MOUNTS)	9
ADDITIONAL WEIGHT LBS				67

TOTAL WEIGHT LBS 136



ELEVATION VIEW

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL.
REV	DATE	DESCRIPTION



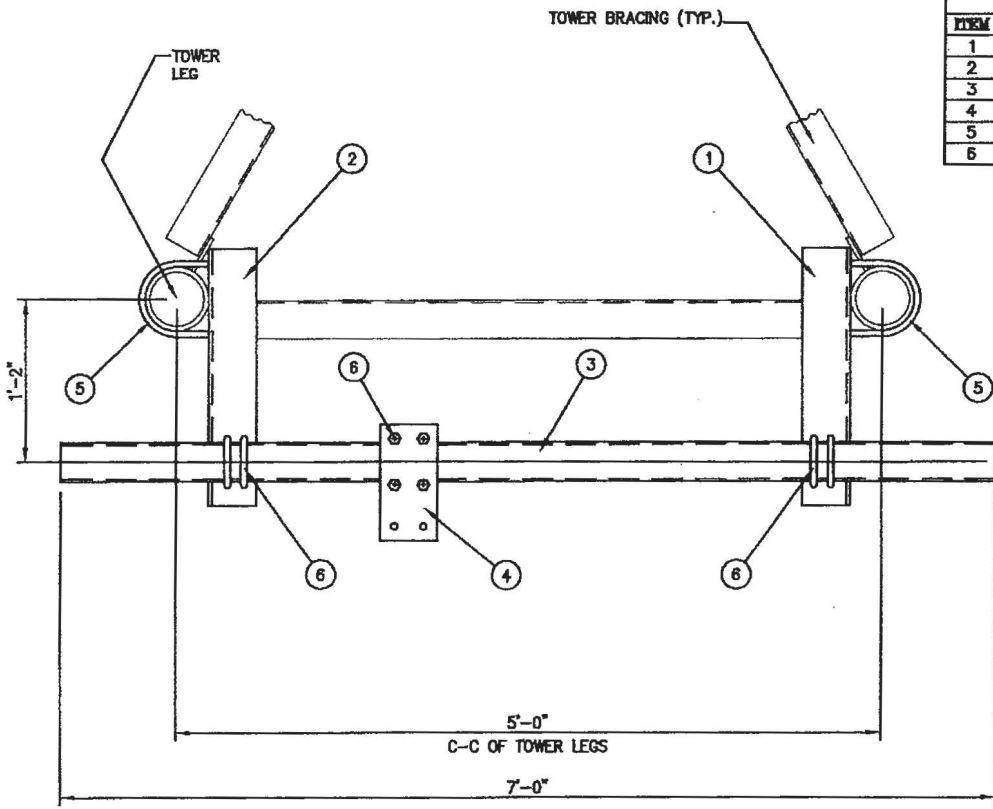
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PIPE MOUNTS: 170' ELEVATION		DRAWING NO.		REV
SITE: HALLSVILLE, MO		414025-PM1		0
CUSTOMER: BOONE COUNTY, MO		JOB NO. 414025	SIZE B	SCALE NONE
DATE 09/25/18	DRAWN BY DLK	CHECKED BY ZAK	SCALE NONE	PAGE 1 OF 1



C10105020 STIFFARM MOUNT FOR PIPE MOUNT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00680	ANGLE, STIFFARM MOUNT, 1 1/4" Ø THRU 5" Ø LEG	24
2	1	CS00681	ANGLE, STIFFARM MOUNT, 1 1/4" Ø THRU 5" Ø LEG	24
3	1	CS00509	TUBE, STIFFARM 3 1/2 X 3 1/2" X 3/16 X 7'-0"	59
4	1	CS00502	PLATE, STIFFARM	8
5	4	C40034022	U-BOLT ASSEMBLY 5/8" Ø X 2 11/16 C-C	6
6	6	C40035003	U-BOLT ASSEMBLY 5/8" Ø X 4 1/4 C-C	11
TOTAL WEIGHT LBS				132



PLAN VIEW

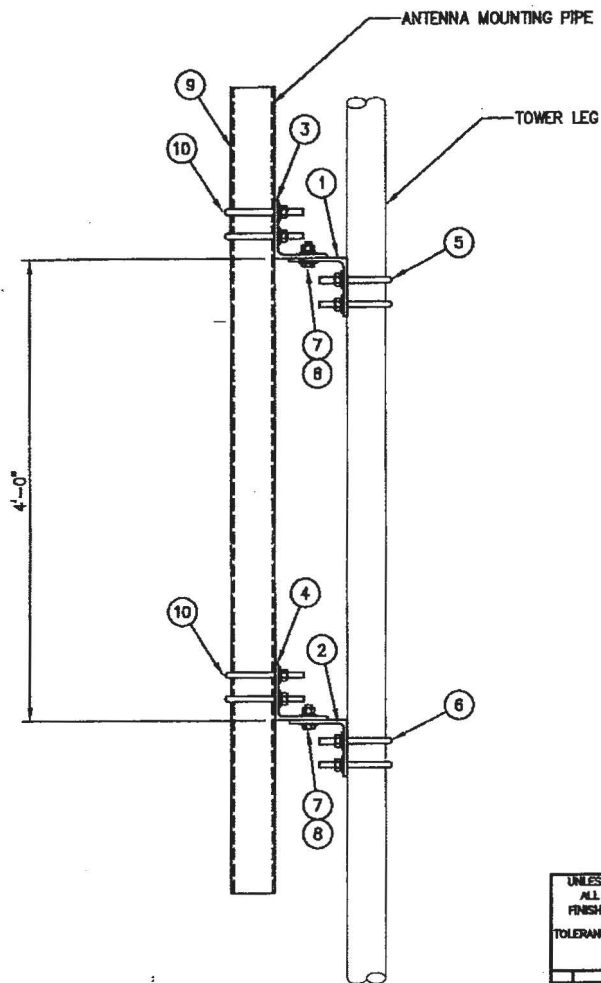
NOTE: DISH MOUNT TIEBACK MAY BE MOUNTED ON THE INSIDE OF THE TOWER.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL.
REV	DATE	DESCRIPTION



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STIFFARM MOUNTS: 170' ELEVATION			
SITE: HALLSVILLE, MO			
CUSTOMER: BOONE COUNTY, MO			
JOB NO. 414025	SIZE	DRAWING NO.	REV
DATE 09/25/18	B	414025-DT1	0
DRAWN BY DLK	SCALE NONE	PAGE 1 OF 1	
CHECKED BY ZAK			



LIST OF MATERIALS FOR STRAIGHT LEG PIPE MOUNT KIT C10173011

ITEM	QTY	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2" LEG	15
2.	1	CS00216	BOTTOM LEG MOUNT FOR 2 1/2" LEG	15
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2" PIPE	15
4.	1	CS00214	BOTTOM PIPE MOUNT FOR 4 1/2" PIPE	15
5.	2	C40034022	U-BOLT ASSEMBLY 5/8" x 2 11/16 C-C (TOP LEG MOUNT)	3
6.	2	C40034024	U-BOLT ASSEMBLY 5/8" x 3 3/16 C-C (BOTTOM LEG MOUNT)	3
7.	4	C40026024	BOLT ASSEMBLY, 5/8" x 2 1/4" A325	2
8.	8	C40031003	FLATWASHER, 5/8" (F436)	1
KIT WEIGHT LBS				69

LIST OF ADDITIONAL MATERIALS

ITEM	QTY	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2" X 7'-0"	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8" x 5 3/16 C-C (PIPE MOUNTS)	9
ADDITIONAL WEIGHT LBS				67
TOTAL WEIGHT LBS				136

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		MATERIAL: TOLERANCES DO NOT APPLY TO RAW MATERIAL
REV	DATE	DESCRIPTION



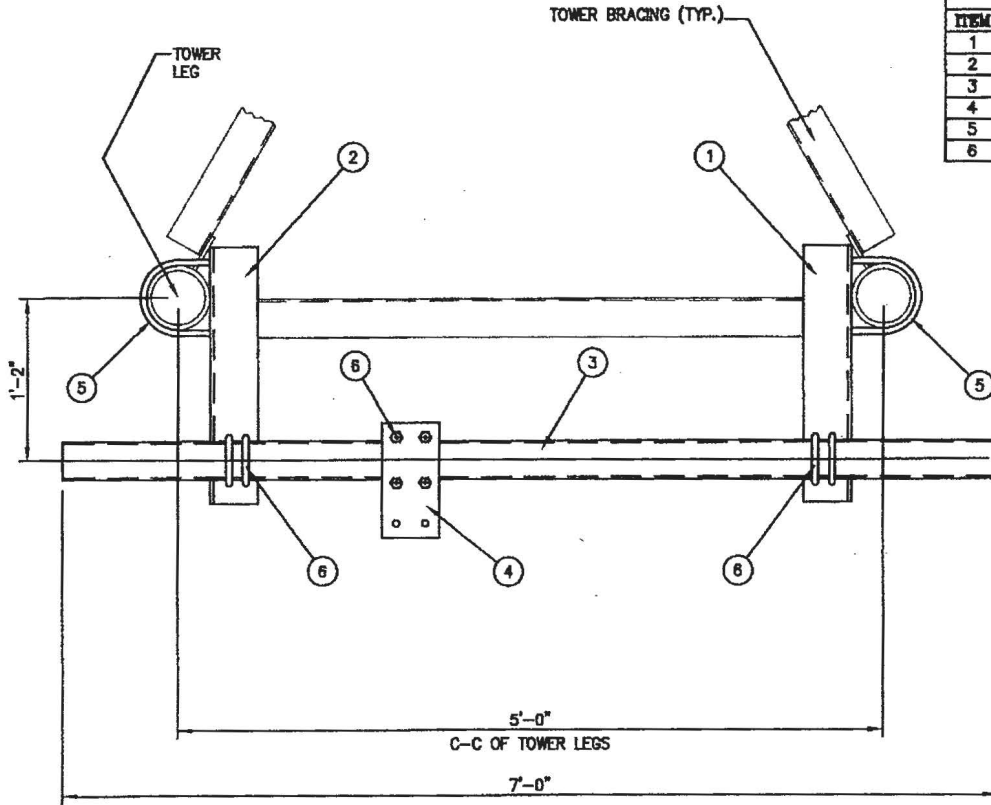
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PIPE MOUNTS: 160' ELEVATION		DRAWING NO.		REV
SITE: HALLSVILLE, MO		414025-PM2		0
CUSTOMER: BOONE COUNTY, MO				
JOB NO. 414025	SIZE B	DRAWING NO. 414025-PM2		REV 0
DATE 09/25/18	DRAWN BY DLK	SCALE NONE		PAGE 1 OF 1
CHECKED BY ZAK ✓				



C10105020 STIFFARM MOUNT FOR PIPE MOUNT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00680	ANGLE, STIFFARM MOUNT, 1 1/4" ø THRU 5" ø LEG	24
2	1	CS00681	ANGLE, STIFFARM MOUNT, 1 1/4" ø THRU 5" ø LEG	24
3	1	CS00509	TUBE, STIFFARM 3 1/2 X 3 1/2" X 3/16 X 7'-0"	59
4	1	CS00502	PLATE, STIFFARM	8
5	4	C40034022	U-BOLT ASSEMBLY 5/8" ø X 2 11/16 C-C	6
6	6	C40035003	U-BOLT ASSEMBLY 5/8" ø X 4 1/4 C-C	11
TOTAL WEIGHT LBS				132



PLAN VIEW

NOTE: DISH MOUNT TIEBACK MAY BE MOUNTED ON THE INSIDE OF THE TOWER.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL.
REV	DATE	DESCRIPTION



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STIFFARM MOUNTS: 160' ELEVATION (ABOVE SPLICE)			
SITE: HALLSVILLE, MO			
CUSTOMER: BOONE COUNTY, MO			
JOB NO. 414025	SIZE /B	DRAWING NO. 414025-DT2	REV 0
DATE 09/25/18	DRAWN BY DLK	SCALE NONE	PAGE 1 OF 1
CHECKED BY ZAK ✓			



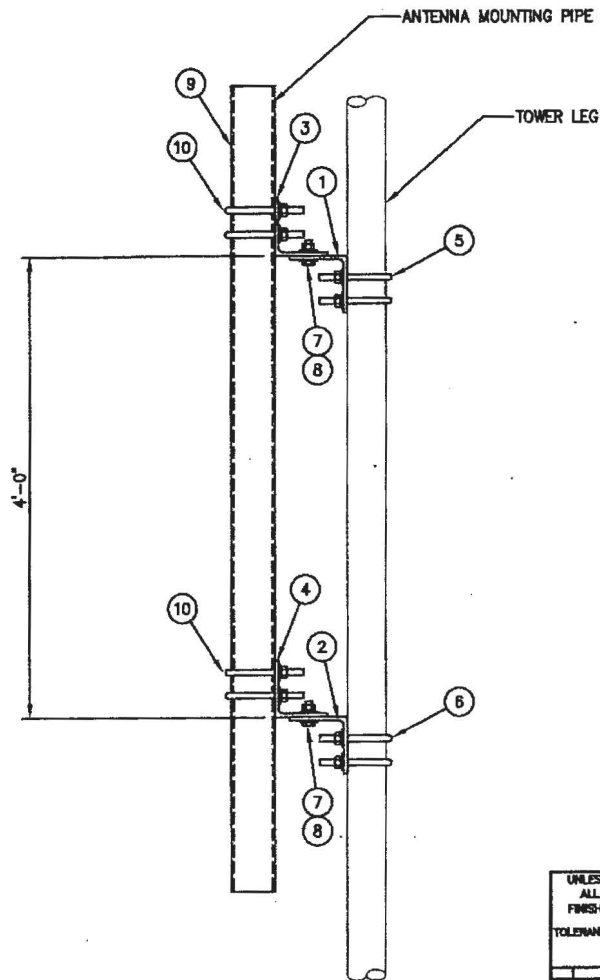
LIST OF MATERIALS FOR STRAIGHT LEG PIPE MOUNT KIT C10173013

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 1/2" LEG	15
2.	1	CS00216	BOTTOM LEG MOUNT FOR 2 1/2" LEG	15
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2" PIPE	15
4.	1	CS00214	BOTTOM PIPE MOUNT FOR 4 1/2" PIPE	15
5.	2	C40034024	U-BOLT ASSEMBLY 5/8" X 3 3/16 C-C (TOP LEG MOUNT)	3
6.	2	C40034024	U-BOLT ASSEMBLY 5/8" X 3 3/16 C-C (BOTTOM LEG MOUNT)	3
7.	4	C40026024	BOLT ASSEMBLY, 5/8" X 2 1/4" A325	2
8.	8	C40031003	FLATWASHER, 5/8" (F436)	1
KIT WEIGHT LBS				69

LIST OF ADDITIONAL MATERIALS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2" X 7'-0"	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8" X 5 3/16 C-C (PIPE MOUNTS)	9
ADDITIONAL WEIGHT LBS				67

TOTAL WEIGHT LBS 136



ELEVATION VIEW

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL
REV	DATE	DESCRIPTION



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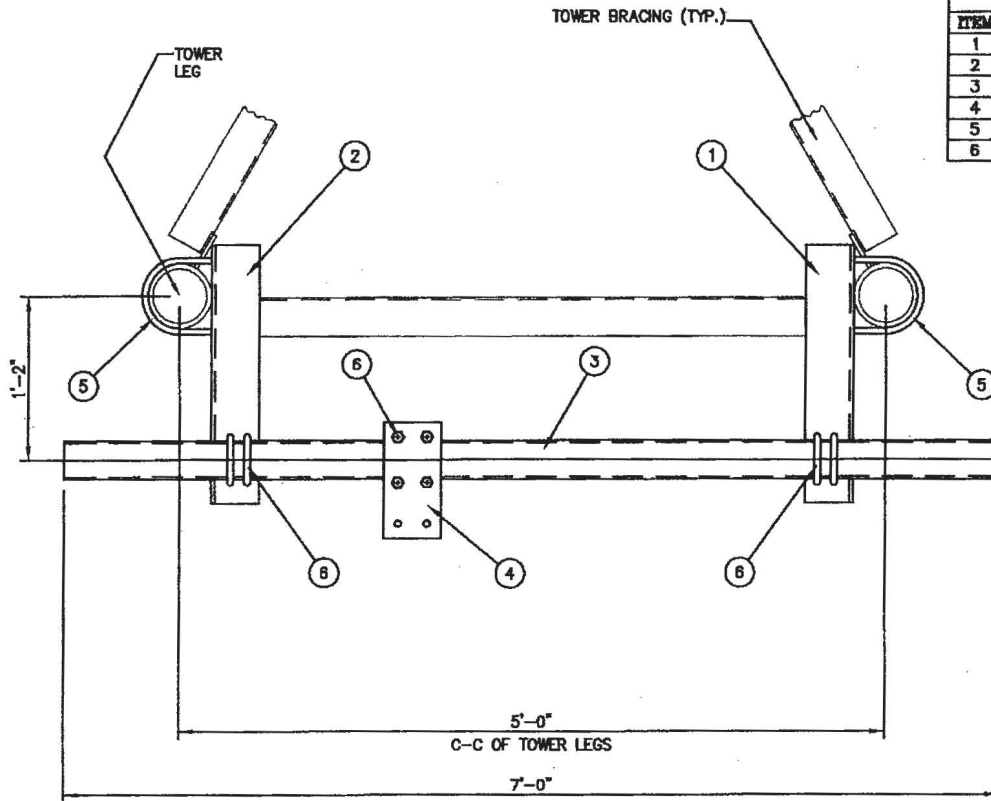
PIPE MOUNTS: 150' ELEVATION
SITE: HALLSVILLE, MO
CUSTOMER: BOONE COUNTY, MO

JOB NO. 414025		SIZE	DRAWING NO.		REV
DATE	09/25/18	B	414025-PM3		0
DRAWN BY	DLK	SCALE		PAGE	
CHECKED BY	ZAK	NONE		1 OF 1	



C10105022 STIFFARM MOUNT FOR PIPE MOUNT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00680	ANGLE, STIFFARM MOUNT, 1 1/4" Ø THRU 5" Ø LEG	24
2	1	CS00681	ANGLE, STIFFARM MOUNT, 1 1/4" Ø THRU 5" Ø LEG	24
3	1	CS00509	TUBE, STIFFARM 3 1/2 X 3 1/2" X 3/16 X 7'-0"	59
4	1	CS00502	PLATE, STIFFARM	8
5	4	C40034024	U-BOLT ASSEMBLY 5/8" Ø X 3 3/16 C-C	7
6	6	C40035003	U-BOLT ASSEMBLY 5/8" Ø X 4 1/4 C-C	11
TOTAL WEIGHT LBS				133



PLAN VIEW

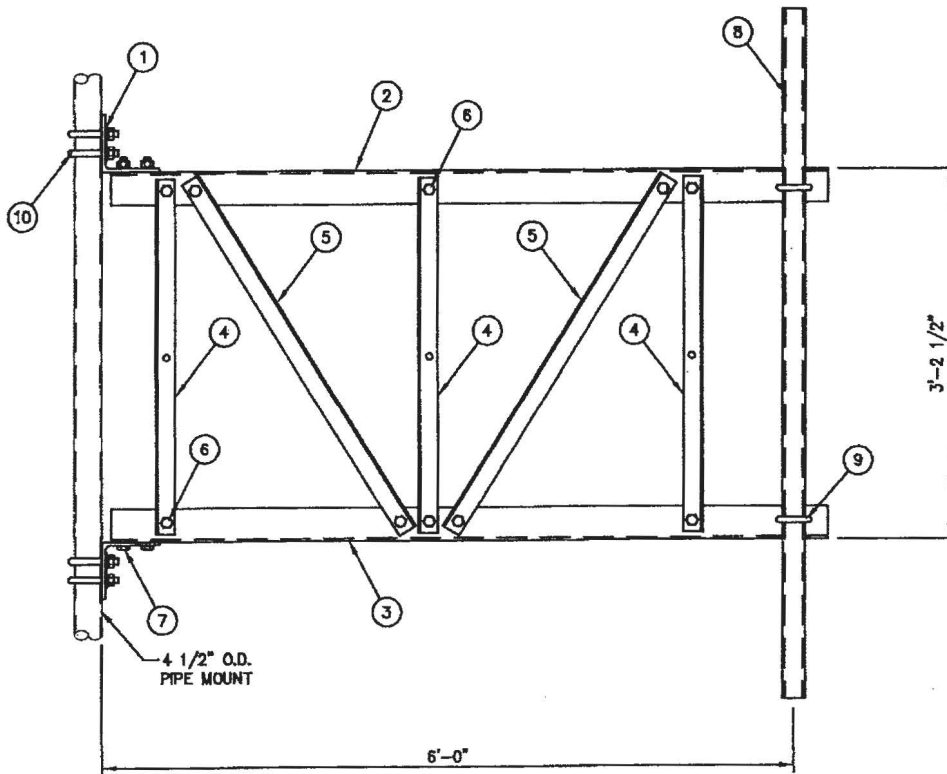
NOTE: DISH MOUNT TIEBACK MAY BE MOUNTED ON THE INSIDE OF THE TOWER.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL.
REV	DATE	DESCRIPTION



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STIFFARM MOUNTS: 150' ELEVATION			
SITE: HALLSVILLE, MO			
CUSTOMER: BOONE COUNTY, MO			
JOB NO. 414025	SIZE	DRAWING NO.	
DATE 09/25/18	B	414025-DT3	
DRAWN BY DLK	CHECKED BY ZAK	SCALE	PAGE
		NONE	1 OF 1



C10151106 6 FT. SIDEARM ASSEMBLY

1	CK00061	SIDEARM ANGLE KIT	138
1	---	MISC HARDWARE (FRAMING)	6
1	C10900110	PIPE ANTENNA MOUNTING KIT 2 3/8" \times X 10'-0	35
4	C40034032	U-BOLT ASSEMBLY 5/8" \times X 5 3/16 C-C	9
TOTAL WEIGHT LBS			188

CK00061 KIT LIST OF MATERIAL

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01225	ANGLE, TOP CHORD	37
3	1	CS01226	ANGLE, BOTTOM CHORD	37
4	3	CS00065	ANGLE, VERTICAL	23
5	2	CS01228	ANGLE, DIAGONAL	18
TOTAL WEIGHT LBS				138

MISC HARDWARE (FRAMING)

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026022	BOLT ASSEMBLY, 5/8" \times X 1 3/4 A325	4
7	4	C40026023	BOLT ASSEMBLY, 5/8" \times X 2 A325	2
TOTAL WEIGHT LBS				6

C10900110 ANTENNA PIPE MOUNTING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981224	ANTENNA MTG. PIPE 2 3/8" \times X 10'-0	32
9	2	C40034023	U-BOLT ASSEMBLY 5/8" \times X 3 1/16 C-C	3
TOTAL WEIGHT LBS				35

MISC HARDWARE

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" \times X 5 3/16 C-C	9
TOTAL WEIGHT LBS				9

NOTES:

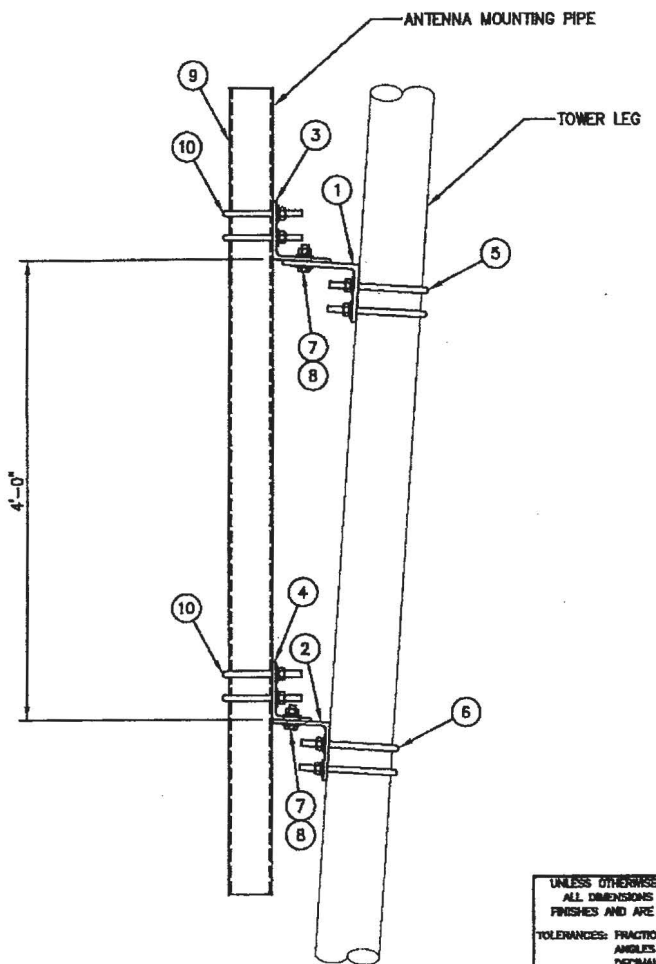
1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES			MATERIAL:
TOLERANCES: FRACTIONS \pm 1/16" ANGLES \pm 1/2 DEG. DECIMALS \pm .010"			TOLERANCES DO NOT APPLY TO RAW MATERIAL.
REV	DATE	BY/CHK	DESCRIPTION



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6 FT. SIDEARMS: 125' ELEVATION			
SITE: HALLSVILLE, MO			
CUSTOMER: BOONE COUNTY, MO			
JOB NO. 414025	SIZE / B	DRAWING NO. 414025-SA1	REV 0
DATE 09/25/18	DRAWN BY DLK	CHECKED BY ZAK/V	SCALE NONE
PAGE 1 OF 1			



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174021

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 3" LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 3" LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2" PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2" PIPE	12
5.	2	C40034028	U-BOLT ASSEMBLY 5/8" x 3 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034028	U-BOLT ASSEMBLY 5/8" x 3 11/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY, 5/8" x 2 1/4" A325	2
8.	8	C40031003	FLATWASHER, 5/8" (F436)	1
KIT WEIGHT LBS				65

LIST OF ADDITIONAL MATERIALS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2" X 7'-0"	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8" x 5 3/16 C-C (PIPE MOUNTS)	9
ADDITIONAL WEIGHT LBS				67
TOTAL WEIGHT LBS				132

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		MATERIAL: TOLERANCES DO NOT APPLY TO RAW MATERIAL
REV	DATE	DESCRIPTION

Sabre Industries
Towers and Poles

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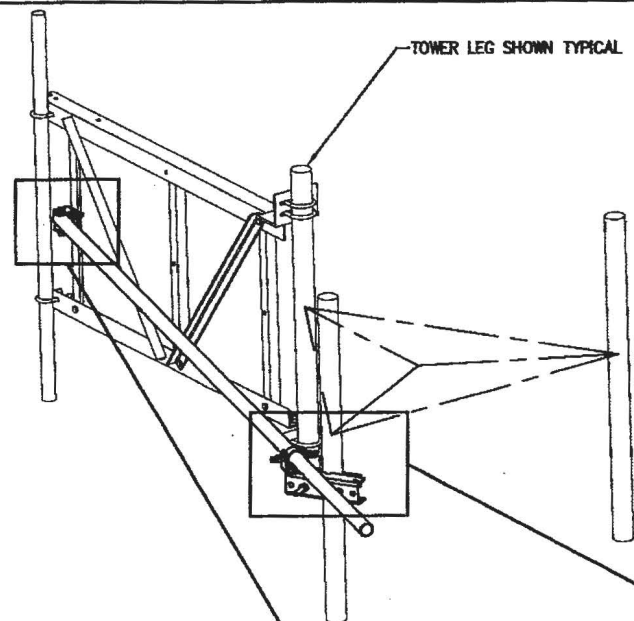
PIPE MOUNTS FOR SIDEARMS: 125' ELEVATION
SITE: HALLSVILLE, MO
CUSTOMER: BOONE COUNTY, MO

JOB NO. 414025	SIZE /B	DRAWING NO. 414025-PM4	REV 0
DATE 09/25/18	DRAWN BY DLK	CHECKED BY ZAK	SCALE NONE
		PAGE 1 OF 1	

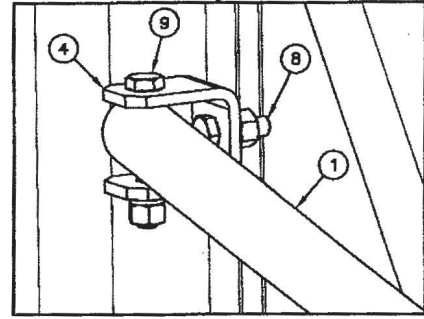
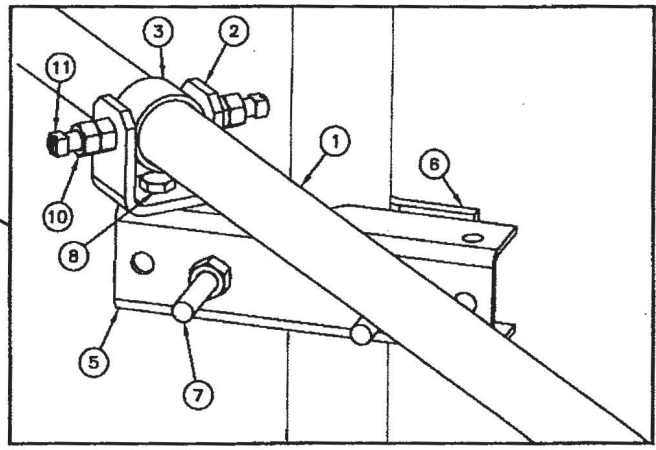


C10179002 SWIVEL KNUCKLE TIEBACK KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	1	CS02089	PIPE, 2 3/8" O.D. X 0.148 X 13'-3"	43
2.	1	CW00013	SWIVEL PLATE WELDMENT	3
3.	1	CS00097	PIPE, 2 7/8" O.D. X 0.203 X 0'-1 3/4"	1
4.	1	CS00098	BENT SWIVEL PLATE	3
5.	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6.	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7.	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8.	2	C40026023	BOLT ASSEMBLY, 5/8 X 2 A325	1
9.	1	C40026033	BOLT ASSEMBLY, 5/8 X 4 1/2 A325	1
10.	2	C40042007	HEX NUT, 5/8 A194 2H	1
11.	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2"	1
TOTAL WEIGHT				70



ISOMETRIC VIEW



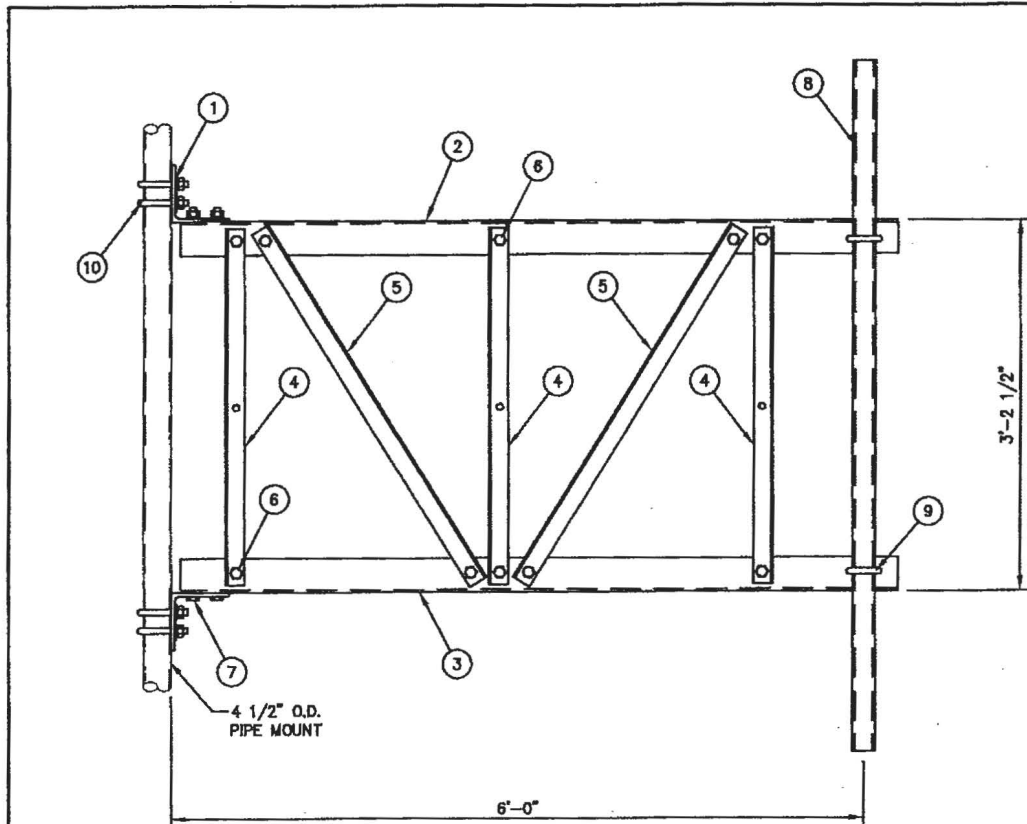
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL
REV	DATE	DESCRIPTION

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Towers and Poles

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SWIVEL KNUCKLE TIEBACKS: 125' ELEVATION
SITE: HALLSVILLE, MO
CUSTOMER: BOONE COUNTY, MO

JOB NO. 414025	SIZE /B	DRAWING NO. 414025-S11	REV 0
DATE 09/25/18	DRAWN BY DLK	CHECKED BY ZAK/	SCALE NONE
		PAGE 1 OF 1	



C10151106 6 FT. SIDEARM ASSEMBLY			
1	CK00061	SIDEARM ANGLE KIT	138
1	---	MISC HARDWARE (FRAMING)	6
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" x 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" x 5 3/16 C-C	9
TOTAL WEIGHT LBS			172

CK00061 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01225	ANGLE, TOP CHORD	37
3	1	CS01226	ANGLE, BOTTOM CHORD	37
4	3	CS00065	ANGLE, VERTICAL	23
5	2	CS01228	ANGLE, DIAGONAL	18
TOTAL WEIGHT LBS				138

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026022	BOLT ASSEMBLY, 5/8" x 1 3/4 A325	4
7	4	C40026023	BOLT ASSEMBLY, 5/8" x 2 A325	2
TOTAL WEIGHT LBS				6

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
B	1	C10981223	ANTENNA MTG. PIPE 2 3/8" x 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" x 3 1/16 C-C	3
TOTAL WEIGHT LBS				19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" x 5 3/16 C-C	9
TOTAL WEIGHT LBS				9

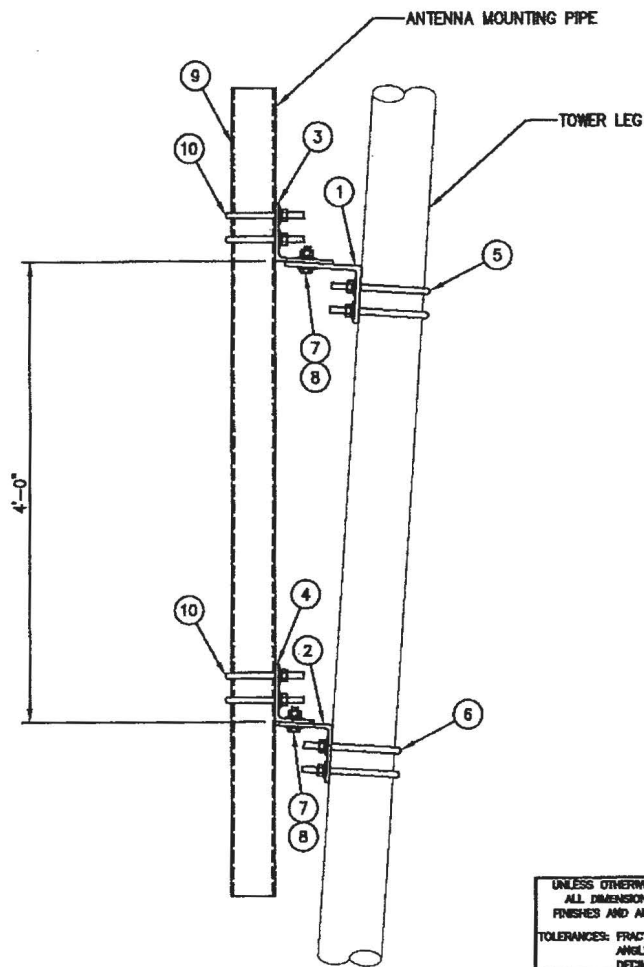
- NOTES:**
- IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
 - QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:	
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL	
REV	DATE	DRN/CHK	DESCRIPTION

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Towers and Poles

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6 FT. SIDEARMS: 90' ELEVATION			
SITE: HALLSVILLE, MO			
CUSTOMER: BOONE COUNTY, MO			
JOB NO. 414025	SIZE B	DRAWING NO. 414025-SA2	REV 0
DATE 08/25/18	DRAWN BY DLK	CHECKED BY ZAK1	SCALE NONE
PAGE 1 OF 1			



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174029

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 3 1/2" LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 3 1/2" LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2" PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2" PIPE	12
5.	2	C40034028	U-BOLT ASSEMBLY 5/8" x 4 3/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034028	U-BOLT ASSEMBLY 5/8" x 4 3/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY, 5/8" x 2 1/4" A325	2
8.	8	C40031003	FLATWASHER, 5/8" (F436)	1
KIT WEIGHT LBS				65

LIST OF ADDITIONAL MATERIALS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2" X 7'-0"	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8" x 5 3/16 C-C (PIPE MOUNTS)	9
ADDITIONAL WEIGHT LBS				67
TOTAL WEIGHT LBS				132

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL
REV	DATE	DESCRIPTION

Sabre Industries
Towers and Poles

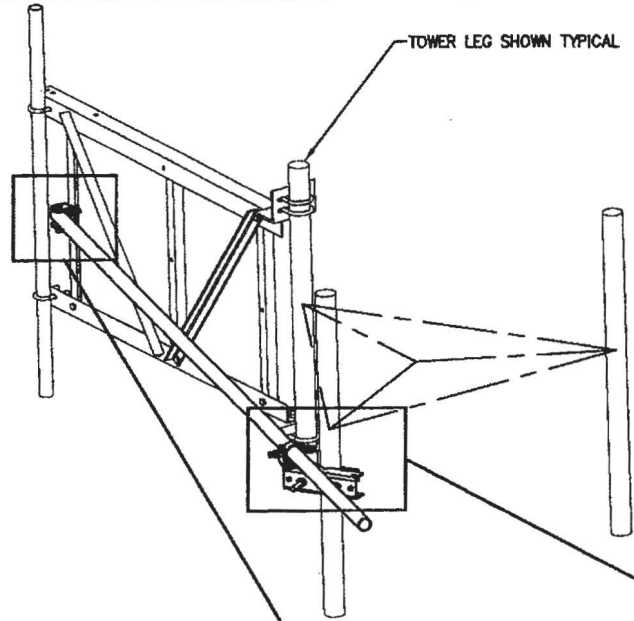
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PIPE MOUNTS FOR SIDEARMS: 90' ELEVATION			
SITE: HALLSVILLE, MO			
CUSTOMER: BOONE COUNTY, MO			
JOB NO. 414025	SIZE B	DRAWING NO. 414025-PM5	REV 0
DATE 08/25/18	DRAWN BY DLK	CHECKED BY ZAK	SCALE NONE PAGE 1 OF 1

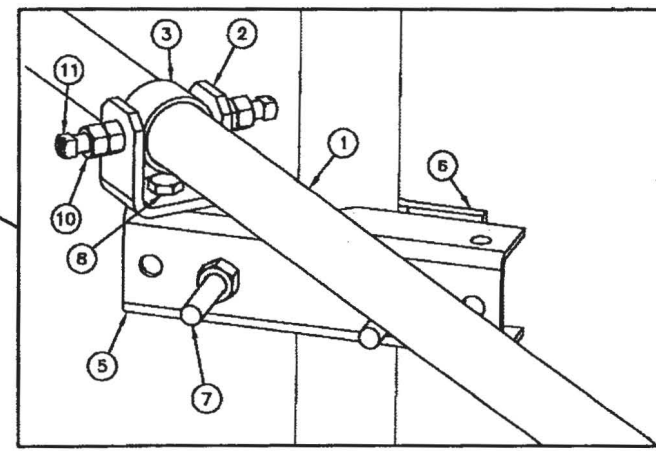
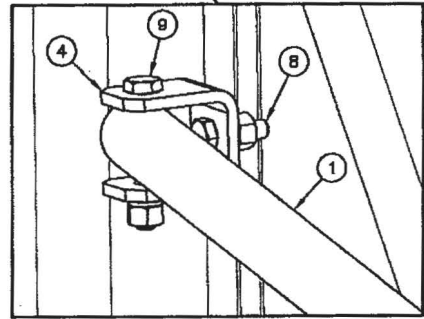


C10179021 SWIVEL KNUCKLE TIEBACK KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	1	CS00248	PIPE, 3 1/2" O.D. X 0.216 X 19'-0	150#
2.	1	CW00060	SWIVEL PLATE WELDMENT	4#
3.	1	CS00247	PIPE, 4 1/2" O.D. X 0.237 X 0'-1 3/4	2#
4.	1	CS00246	BENT SWIVEL PLATE	3#
5.	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9#
6.	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3#
7.	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4#
8.	2	C40026023	BOLT ASSEMBLY, 5/8 X 2 A325	1#
9.	1	C40026036	BOLT ASSEMBLY, 5/8 X 5 1/2 A325	1#
10.	2	C40042007	HEX NUT, 5/8 A194 2H	1#
11.	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1#
TOTAL WEIGHT				179#



ISOMETRIC VIEW



UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES			MATERIAL:
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"			TOLERANCES DO NOT APPLY TO RAW MATERIAL
REV	DATE	DRW/CHK	DESCRIPTION

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SWIVEL KNUCKLE TIEBACKS: 90' ELEVATION			
SITE: HALLSVILLE, MO			
CUSTOMER: BOONE COUNTY, MO			
JOB NO. 414025	SIZE /B	DRAWING NO. 414025-ST2	REV 0
DATE 09/25/18	DRWN BY DLK	CHECKED BY ZAK	SCALE NONE
PAGE 1 OF 1		PAGE 1 OF 1	

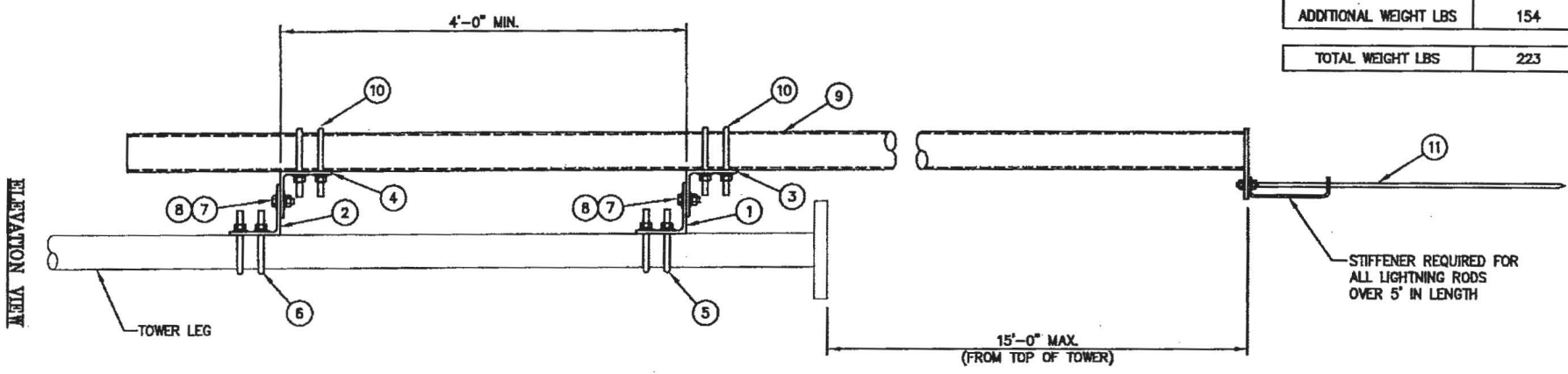


LIST OF MATERIALS FOR STRAIGHT LEG PIPE MOUNT KIT C10173008

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00218	TOP LEG MOUNT FOR 2" LEG	15
2.	1	CS00216	BOTTOM LEG MOUNT FOR 2" LEG	15
3.	1	CS00214	TOP PIPE MOUNT FOR 2 7/8" PIPE	15
4.	1	CS00214	BOTTOM PIPE MOUNT FOR 2 7/8" PIPE	15
5.	2	C40034022	U-BOLT ASSEMBLY 5/8" x X 2 11/16 C-C (TOP LEG MOUNT)	3
6.	2	C40034022	U-BOLT ASSEMBLY 5/8" x X 2 11/16 C-C (BOTTOM LEG MOUNT)	3
7.	4	C40026024	BOLT ASSEMBLY, 5/8" x X 2 1/4" A325	2
8.	8	C40031003	FLATWASHER, 5/8" (F436)	1
KIT WEIGHT LBS				69

LIST OF ADDITIONAL MATERIALS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	CW00032	LIGHTNING ROD EXTENSION 2 7/8" O.D. X 21'-0"	128
10.	4	C40034025	U-BOLT ASSEMBLY 5/8" x X 3 9/16 C-C (PIPE MOUNTS)	7
11.	1 KIT	C30986003	LIGHTNING ROD ASSY 3/4" x X 8'-0" W/STIFFENER	19
ADDITIONAL WEIGHT LBS				154
TOTAL WEIGHT LBS				223



ELEVATION VIEW

NOTE:
THE ASSEMBLY IS SHOWN ON THE OUTSIDE OF THE TOWER.
IT MAY ALSO BE MOUNTED ON THE INSIDE OF TOWER, IF NECESSARY.

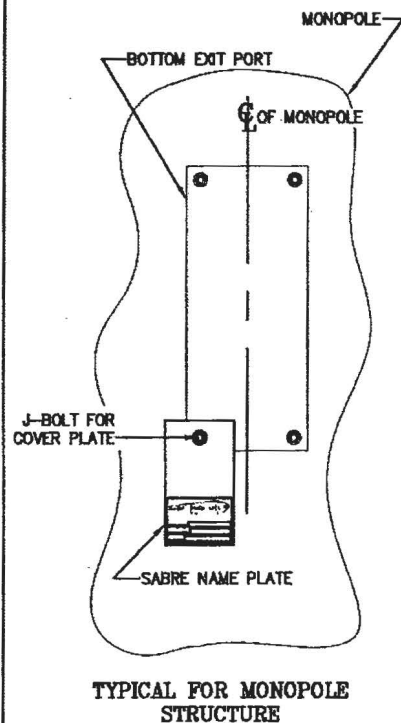
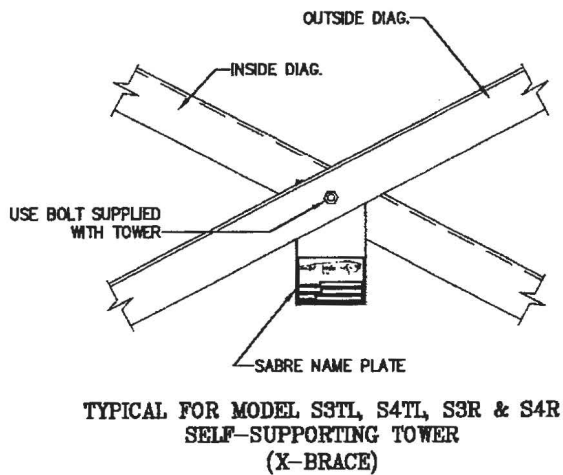
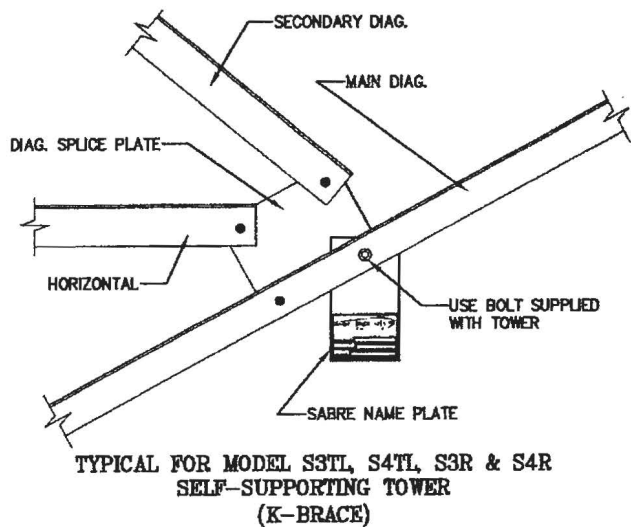
REV	DATE	DRW/CHK	DESCRIPTION

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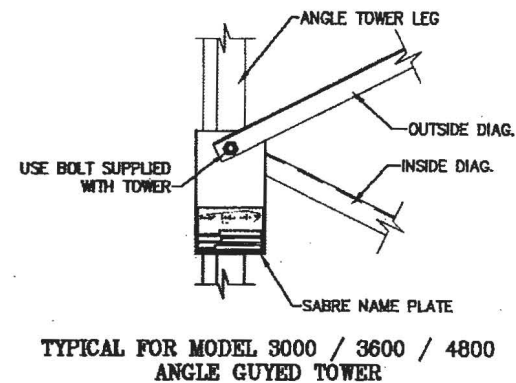
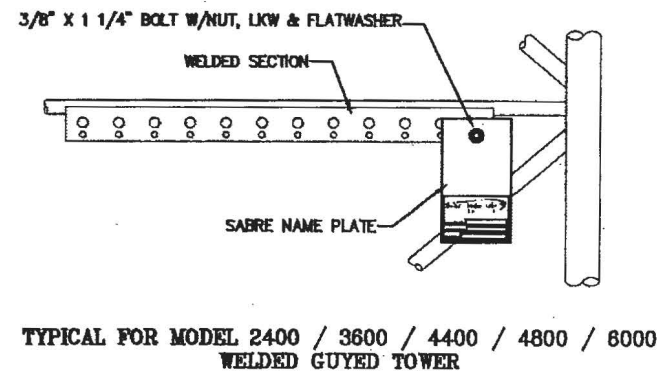
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LIGHTNING ROD W/STIFFENER & EXTENSION
SITE: HALLSVILLE, MO
CUSTOMER: BOONE COUNTY, MO

JOB NO. 414025	SIZE /B	DRAWING NO. 414025-LR	REV 0
DATE 08/26/18	DRWN BY DLK	SCALE NONE	PAGE 1 OF 1
CHECKED BY ZAK			



NOTE:
NAME PLATE SHOULD BE MOUNTED AT
APPROXIMATELY EYE LEVEL WHEN POSSIBLE.



UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL
REV	DATE	DESCRIPTION
1	11/14/01	ISSUE FOR ANSIS 2400 & 3600 WELDED GUYED TOWER
2	11/14/01	ISSUE FOR ANSIS 3000 & 4800 WELDED GUYED TOWER
3	11/14/01	ISSUE FOR ANSIS 4400 & 6000 WELDED GUYED TOWER
4	05/27/02	ISSUE FOR ANSIS 2400 WELDED GUYED TOWER
5	02/27/02	ISSUE FOR ANSIS 3000 WELDED GUYED TOWER
6	02/27/02	ISSUE FOR ANSIS 3600 WELDED GUYED TOWER
7	02/27/02	ISSUE FOR ANSIS 4400 WELDED GUYED TOWER
8	02/27/02	ISSUE FOR ANSIS 4800 WELDED GUYED TOWER
9	02/27/02	ISSUE FOR ANSIS 6000 WELDED GUYED TOWER
10	02/27/02	ISSUE FOR ANSIS 2400 WELDED GUYED TOWER
11	02/27/02	ISSUE FOR ANSIS 3000 WELDED GUYED TOWER
12	02/27/02	ISSUE FOR ANSIS 3600 WELDED GUYED TOWER
13	02/27/02	ISSUE FOR ANSIS 4400 WELDED GUYED TOWER
14	02/27/02	ISSUE FOR ANSIS 4800 WELDED GUYED TOWER
15	02/27/02	ISSUE FOR ANSIS 6000 WELDED GUYED TOWER

Sabre Industries
Towers and Poles

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OPTIONAL MOUNTING INSTALLATION
SABRE NAME PLATE

DATE	10/15/96	SIZE	B	DRAWING NO.	906956	REV	6
DRAWN BY	DEM	SCALE	None	PAGE	1 OF 1		
CHECKED BY	RGF						

NOTICE

ALL PARTS ARE TO BE INVENTORIED AND ANY
SHORTAGES REPORTED WITHIN 48 HOURS OF DELIVERY
TO THE CONTRACTING ERECTOR.

SHORTAGES REPORTED AFTER THIS TIME PERIOD WILL
BE CHARGED TO THE CONTRACTOR.

CALL 712-258-6690

TO REACH THE SABRE CONTRACTS DEPARTMENT.

AVISO


Todas las partes serán inventariadas y los faltantes reportados
por el contratista dentro de las 48 horas a partir de la entrega.

Los faltantes reportados después de 48 horas serán cargados al contratista.

Para aclaraciones llame a:

Sabre-Departamento de Contrataciones

(001) 712 258-6690

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:		INVENTORY REQUIREMENT SHEET						
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL.								
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DRAWN BY: ZAK CHECKED BY: JD			SCALE	None		PAGE		1 OF 1		
REV	DATE	BY	DESCRIPTION							



CUSTOMER : BOONE COUNTY, MO

SITE : HALLSVILLE, MO

B.O.M. 180 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE
 PLT=PALLET
 BDL=BUNDLE
 CRT=CRATE
 D=DRUM
 BX=BOX

OR=ORANGE
 WH=WHITE
 O/W=OR & WH
 N/R=NOT REQ'D
 SP=SPECIAL

PACKING

ITEM NO.	NO. REQ'D.	DRAWING		PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	KIT	QTY OF PKG'S	PKG. NO.
		NUMBER	REV							
1					ANCHOR BOLTS AND TEMPLATES					
2	18	C40041060	0	C40041060	ANCHOR BOLT ASSEMBLY, 1 1/2 Ø X 6'-6 (F1554 GR 105)	857				
3					W/(5) NUTS 1 1/2 HEAVY HEX (A563 DH)					
4					(2) FLATWASHERS 1 1/2 (F436)					
5	6	C30139210	0	C30139210	PLATE, A.B. TEMPLATE 1 1/2"Ø A.B. ON 10 1/4"Ø B.C.	70				
6					LEG TO LEG TEMPLATE MATERIAL					
7	1 KIT			C30400129	LEG TO LEG TEMPLATE KIT, 17'-3 BASE SPREAD	370				
8					(6) 1 1/2"Ø A.B. ON A 10 1/4"Ø B.C.					
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REV	DATE	DRW	CHK	DESCRIPTION	DATE	7/19/18	JOB NO.	414025
					DRAWN BY	DLK	PRINT NO.	BOM-1
					CHECKED BY	KD	PAGE	1 OF 20



CUSTOMER : BOONE COUNTY, MO

SITE : HALLSVILLE, MO

B.O.M. 180 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE
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PACKING

ITEM NO.	NO. REQ'D.	DRAWING		PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	KIT	QTY OF PKG'S	PKG. NO.
		NUMBER	REV							
1					TOWER LEGS					
2	3	08-T1181241	0	08-T1181241	SECT. 8 LEG 4 1/2 Ø X 20'-0 5/16 W/STEP BOLTS	3953				
3	3	07-T1181039	0	07-T1181039	SECT. 7 LEG 4 1/4 Ø X 20'-0 5/16 W/STEP BOLTS	3511				
4	3	06-T1181038	0	06-T1181038	SECT. 6 LEG 4 1/4 Ø X 20'-0 5/16	3409				
5	3	05-T1180944	0	05-T1180944	SECT. 5 LEG 3 3/4 Ø X 20'-0 5/16	2735				
6	3	04-T1180940	0	04-T1180940	SECT. 4 LEG 3 1/2 Ø X 20'-0 5/16	2355				
7	3	03-T1180838	0	03-T1180838	SECT. 3 LEG 3 1/4 Ø X 20'-0 5/16	2017				
8	3	02-T1180732	0	02-T1180732	SECT. 2 LEG 3 Ø X 20'-0 5/16	1761				
9	3	01-T1180622	0	01-T1180622	SECT. 1 LEG 2 1/2 Ø X 20'-0 5/16	1258				
10	3	01-T1180608	0	01-T1180608	SECT. 1 LEG 2 Ø X 20'-0 5/16	852				
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REV	DATE	DRW	CHK	DESCRIPTION	DATE	9/25/18	JOB NO.	414025
					DRAWN BY	DLK	PRINT NO.	BOM-1
					CHECKED BY	KD	PAGE	2 OF 20



CUSTOMER : BOONE COUNTY, MO

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		NUMBER	REV							
1					TOWER BRACING					
2	1 KIT				BRACING #08-T8300081 SECTION 08	1534				
3					CONSISTING OF THE MATERIAL LISTED BELOW					
4	6	TS02614	1	TS02614	ANGLE, DIAGONAL 3 X 3 X 1/4 X 17'-2 3/4	527				
5	6	TS02615	1	TS02615	ANGLE, DIAGONAL 3 X 3 X 1/4 X 16'-8 9/16	511				
6	6	TS02616	1	TS02616	ANGLE, DIAGONAL 3 X 3 X 1/4 X 16'-2 1/2	496				
7					SPLICE BOLTS TOP OF SECTION 08					
8	19			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	115				
9	1 KIT				HARDWARE #TK00261 SECTION 08	38				
10					CONSISTING OF THE MATERIAL LISTED BELOW					
11	10			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	8				
12	38			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	28				
13	10			C40047009	RINGFILL, 1/2 - 3/4 Ø BOLT	2				
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REV	DATE	DRW	CHK	DESCRIPTION	DATE	9/25/18	JOB NO.	414025
					DRAWN BY	DLK	PRINT NO.	BOM-1
					CHECKED BY	KD	PAGE	3 OF 20



CUSTOMER : BOONE COUNTY, MO
SITE : HALLSVILLE, MO
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		NUMBER	REV							
1					TOWER BRACING CONT'D					
2	1 KIT				BRACING #07-T8300071 SECTION 07	1392				
3					CONSISTING OF THE MATERIAL LISTED BELOW					
4	6	TS02584	1	TS02584	ANGLE, DIAGONAL 3 X 3 X 1/4 X 15'-8 1/16	479				
5	6	TS02585	1	TS02585	ANGLE, DIAGONAL 3 X 3 X 1/4 X 15'-2 1/16	464				
6	6	TS02586	1	TS02586	ANGLE, DIAGONAL 3 X 3 X 1/4 X 14'-8	449				
7					SPLICE BOLTS TOP OF SECTION 07					
8	19			C40026094	BOLT ASSEMBLY, 1 1/4 Ø X 5 1/2 A325	69				
9	1 KIT				HARDWARE #TK00261 SECTION 07	38				
10					CONSISTING OF THE MATERIAL LISTED BELOW					
11	10			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	8				
12	38			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	28				
13	10			C40047009	RINGFILL, 1/2 - 3/4 Ø BOLT	2				
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REV	DATE	DRW	CHK	DESCRIPTION	DATE	9/25/18	JOB NO.	414025
					DRAWN BY	DLK	PRINT NO.	BOM-1
					CHECKED BY	KD	PAGE	4 OF 20



CUSTOMER : BOONE COUNTY, MO

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		NUMBER	REV							
1					TOWER BRACING CONT'D					
2	1 KIT				BRACING #06-T8300064 SECTION 06	943				
3					CONSISTING OF THE MATERIAL LISTED BELOW					
4	6	TS02563	1	TS02563	ANGLE, DIAGONAL 3 X 3 X 3/16 X 14'-0 7/8	326				
5	6	TS02564	1	TS02564	ANGLE, DIAGONAL 3 X 3 X 3/16 X 13'-6 15/16	314				
6	6	TS02565	1	TS02565	ANGLE, DIAGONAL 3 X 3 X 3/16 X 13'-1 1/16	303				
7					SPLICE BOLTS TOP OF SECTION 06					
8	19			C40026094	BOLT ASSEMBLY, 1 1/4 Ø X 5 1/2 A325	69				
9	1 KIT				HARDWARE #TK00260 SECTION 06	36				
10					CONSISTING OF THE MATERIAL LISTED BELOW					
11	10			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	7				
12	38			C40026043	BOLT ASSEMBLY, 3/4 Ø X 2 A325	27				
13	10			C40047009	RINGFILL, 1/2 - 3/4 Ø BOLT	2				
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						DATE	<u>9/25/18</u>	JOB NO.	<u>414025</u>
						DRAWN BY	<u>DLK</u>	PRINT NO.	<u>BOM-1</u>
						CHECKED BY	<u>KD</u>	PAGE	<u>5 OF 20</u>
REV	DATE	DRW	CHK	DESCRIPTION					



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		NUMBER	REV							
1					TOWER BRACING CONT'D					
2	1 KIT				BRACING #05-T8300059 SECTION 05	870				
3					CONSISTING OF THE MATERIAL LISTED BELOW					
4	6	TS02545	1	TS02545	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 11'-10 15/16	229				
5	6	TS02546	1	TS02546	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 11'-6 1/4	221				
6	6	TS02547	1	TS02547	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 11'-1 5/8	214				
7	6	TS02548	1	TS02548	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 10'-9	206				
8					SPLICE BOLTS TOP OF SECTION 05					
9	19			C40026094	BOLT ASSEMBLY, 1 1/4 Ø X 5 1/2 A325	69				
10	1 KIT				HARDWARE #TK00194 SECTION 05	30				
11					CONSISTING OF THE MATERIAL LISTED BELOW					
12	13			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	6				
13	50			C40026022	BOLT ASSEMBLY, 5/8 Ø X 1 3/4 A325	22				
14	13			C40047003	RINGFILL, 3/8 THICK - 5/8 Ø BOLT	2				
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REV	DATE	DRW	CHK	DESCRIPTION	DATE	9/25/18	JOB NO.	414025
					DRAWN BY	DLK	PRINT NO.	BOM-1
					CHECKED BY	KD	PAGE	6 OF 20



CUSTOMER : BOONE COUNTY, MO

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		NUMBER	REV							
1					TOWER BRACING CONT'D					
2	1 KIT				BRACING #04-T8300052 SECTION 04	776				
3					CONSISTING OF THE MATERIAL LISTED BELOW					
4	6	TS02517	1	TS02517	ANGLE, DIAGONAL 2 X 2 X 1/4 X 10'-3 11/16	205				
5	6	TS02518	1	TS02518	ANGLE, DIAGONAL 2 X 2 X 1/4 X 9'-11 3/16	198				
6	6	TS02519	1	TS02519	ANGLE, DIAGONAL 2 X 2 X 1/4 X 9'-6 11/16	190				
7	6	TS02520	1	TS02520	ANGLE, DIAGONAL 2 X 2 X 1/4 X 9'-2 1/4	183				
8					SPLICE BOLTS TOP OF SECTION 04					
9	19			C40026080	BOLT ASSEMBLY, 1 Ø X 4 3/4 A325	44				
10	1 KIT				HARDWARE #TK00259 SECTION 04	32				
11					CONSISTING OF THE MATERIAL LISTED BELOW					
12	13			C40026024	BOLT ASSEMBLY, 5/8 Ø X 2 1/4 A325	7				
13	50			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	23				
14	13			C40047003	RINGFILL, 3/8 THICK - 5/8 Ø BOLT	2				
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REV	DATE	DRW	CHK	DESCRIPTION	DATE	9/25/18	JOB NO.	414025
					DRAWN BY	DLK	PRINT NO.	BOM-1
					CHECKED BY	KD	PAGE	7 OF 20



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		NUMBER	REV							
1					TOWER BRACING CONT'D					
2	1 KIT				BRACING #03-T8300046 SECTION 03	509				
3					CONSISTING OF THE MATERIAL LISTED BELOW					
4	6	TS02493	1	TS02493	ANGLE, DIAGONAL 2 X 2 X 3/16 X 8'-10 1/2	136				
5	6	TS02494	1	TS02494	ANGLE, DIAGONAL 2 X 2 X 3/16 X 8'-6 1/8	130				
6	6	TS02495	1	TS02495	ANGLE, DIAGONAL 2 X 2 X 3/16 X 8'-1 7/8	124				
7	6	TS02496	1	TS02496	ANGLE, DIAGONAL 2 X 2 X 3/16 X 7'-9 11/16	119				
8					SPLICE BOLTS TOP OF SECTION 03					
9	19			C40026079	BOLT ASSEMBLY, 1 Ø X 4 1/2 A325	43				
10	1 KIT				HARDWARE #TK00194 SECTION 03	30				
11					CONSISTING OF THE MATERIAL LISTED BELOW					
12	13			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	6				
13	50			C40026022	BOLT ASSEMBLY, 5/8 Ø X 1 3/4 A325	22				
14	13			C40047003	RINGFILL, 3/8 THICK - 5/8 Ø BOLT	2				
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REV	DATE	DRW	CHK	DESCRIPTION	DATE	9/25/18	JOB NO.	414025
					DRAWN BY	DLK	PRINT NO.	BOM-1
					CHECKED BY	KD	PAGE	8 OF 20



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		NUMBER	REV					KIT	QTY OF PKG'S	PKG. NO.
1					TOWER BRACING CONT'D					
2	1 KIT				BRACING #02-T8300037 SECTION 02	305				
3					CONSISTING OF THE MATERIAL LISTED BELOW					
4	6	TS02457	1	TS02457	ANGLE, DIAGONAL 2 X 2 X 1/8 X 7'-4 1/8	76				
5	6	TS02458	1	TS02458	ANGLE, DIAGONAL 2 X 2 X 1/8 X 7'-0 1/8	73				
6	6	TS02459	1	TS02459	ANGLE, DIAGONAL 2 X 2 X 1/8 X 6'-8 3/16	68				
7	6	TS02460	1	TS02460	ANGLE, DIAGONAL 2 X 2 X 1/8 X 6'-4 7/16	65				
8	3	TS02449	1	TS02449	ANGLE, HORIZONTAL 2 X 2 X 1/8 X 4'-5 5/8	23				
9					SPLICE BOLTS TOP OF SECTION 02					
10	19			C40026077	BOLT ASSEMBLY, 1 Ø X 4 A325	39				
11	1 KIT				HARDWARE #TK00134 SECTION 02	33				
12					CONSISTING OF THE MATERIAL LISTED BELOW					
13	13			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	6				
14	57			C40026022	BOLT ASSEMBLY, 5/8 Ø X 1 3/4 A325	25				
15	13			C40047003	RINGFILL, 3/8 THICK - 5/8 Ø BOLT	2				
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REV	DATE	DRW	CHK	DESCRIPTION	DATE	9/25/18	JOB NO.	414025
					DRAWN BY	DLK	PRINT NO.	BOM-1
					CHECKED BY	KD	PAGE	9 OF 20



CUSTOMER : BOONE COUNTY, MO

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		NUMBER	REV							
1					TOWER BRACING CONT'D					
2	1 KIT				BRACING #01-T8300031 SECTION 01-20	542				
3					CONSISTING OF THE MATERIAL LISTED BELOW					
4	24	TS02443	1	TS02443	ANGLE, DIAGONAL 2 X 2 X 1/4 X 6'-2 3/4	497				
5	3	TS02411	1	TS02411	ANGLE, HORIZONTAL 2 X 2 X 1/4 X 4'-5 3/4	45				
6					SPLICE BOLTS TOP OF SECTION 01-20					
7	13			C40026048	BOLT ASSEMBLY, 3/4 Ø X 3 1/4 A325	11				
8	1 KIT				HARDWARE #TK00146 SECTION 01-20	35				
9					CONSISTING OF THE MATERIAL LISTED BELOW					
10	13			C40026024	BOLT ASSEMBLY, 5/8 Ø X 2 1/4 A325	7				
11	57			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	26				
12	13			C40047003	RINGFILL, 3/8 THICK - 5/8 Ø BOLT	2				
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REV	DATE	DRW	CHK	DESCRIPTION	DATE	9/25/18	JOB NO.	414025
					DRAWN BY	DLK	PRINT NO.	BOM-1
					CHECKED BY	KD	PAGE	10 OF 20



CUSTOMER : BOONE COUNTY, MO

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		NUMBER	REV							
1					TOWER BRACING CONT'D					
2	1 KIT				BRACING #01-T8300029 SECTION 01-20	280				
3					CONSISTING OF THE MATERIAL LISTED BELOW					
4	24	TS02441	1	TS02441	ANGLE, DIAGONAL 2 X 2 X 1/8 X 6'-2 3/4	257				
5	3	TS02409	1	TS02409	ANGLE, HORIZONTAL 2 X 2 X 1/8 X 4'-5 3/4	23				
6	1 KIT				HARDWARE #TK00134 SECTION 01-20	33				
7					CONSISTING OF THE MATERIAL LISTED BELOW					
8	13			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	6				
9	57			C40026022	BOLT ASSEMBLY, 5/8 Ø X 1 3/4 A325	25				
10	13			C40047003	RINGFILL, 3/8 THICK - 5/8 Ø BOLT	2				
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REV	DATE	DRW	CHK	DESCRIPTION	DATE	9/25/18	JOB NO.	414025
					DRAWN BY	DLK	PRINT NO.	BOM-1
					CHECKED BY	KD	PAGE	11 OF 20



CUSTOMER : BOONE COUNTY, MO

SITE : HALLSVILLE, MO

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		NUMBER	REV							
1					SAFETY CLIMB					
2	1 KIT			C30012054	200' TUF-TUG SAFETY CLIMB MATERIAL	95				
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REV	DATE	DRW	CHK	DESCRIPTION	DATE	9/25/18	JOB NO.	414025
					DRAWN BY	DLK	PRINT NO.	BOM-1
					CHECKED BY	KD	PAGE	12 OF 20



CUSTOMER : BOONE COUNTY, MO

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1					CLIMBING LADDER					
2	9	CW00118	0	CW00118	WELDMENT, 20 FT. CLIMBING LADDER 16" WIDE	851				
3	18	CS00037	2	CS00037	PLATE, LADDER SPLICE	7				
4	2	CS00242	1	CS00242	ANGLE, LADDER BASE SUPPORT	15				
5	46	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	25				
6					CLIMBING LADDER HARDWARE					
7	20			C40039002	J-BOLT ASSEMBLY, 3/8" Ø X 7 1/4 I.L.	7				
8	26			C40039001	J-BOLT ASSEMBLY, 3/8" Ø X 5 3/4 I.L.	8				
9	40			C40024004	BOLT ASSEMBLY, 3/8" Ø X 1 1/2 GRD 5	4				
10	98			C40044002	STEP BOLT ASSEMBLY, 5/8" Ø X 7 H.D.G.	98				
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REV	DATE	DRW	CHK	DESCRIPTION	DATE	9/26/18	JOB NO.	414025
					DRAWN BY	DLK	PRINT NO.	BOM-1
					CHECKED BY	ZAK	PAGE	13 OF 20



CUSTOMER : BOONE COUNTY, MO

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 O/W=OR & WH
 N/R=NOT REQ'D
 SP=SPECIAL

PACKING

ITEM NO.	NO. REQ'D.	DRAWING		PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	KIT	QTY OF PKG'S	PKG. NO.
		NUMBER	REV							
1					WAVEGUIDE LADDER (WG1)					
2	18	CS00146	2	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540				
3	45	CS00413	0	CS00413	ANGLE, WAVEGUIDE SUPPORT (15 HOLE)	207				
4	18	CS00037	2	CS00037	PLATE, LADDER SPLICE	7				
5	46	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	25				
6					WAVEGUIDE LADDER HARDWARE (WG1)					
7	20			C40039002	J-BOLT ASSEMBLY, 3/8" Ø X 7 1/4 I.L.	7				
8	26			C40039001	J-BOLT ASSEMBLY, 3/8" Ø X 5 3/4 I.L.	8				
9	130			C40024004	BOLT ASSEMBLY, 3/8" Ø X 1 1/2 GRD 5	13				
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REV	DATE	DRW	CHK	DESCRIPTION	DATE	9/26/18	JOB NO.	414025
					DRAWN BY	DLK	PRINT NO.	BOM-1
					CHECKED BY	ZAK	PAGE	14 OF 20



CUSTOMER : BOONE COUNTY, MO

SITE : HALLSVILLE, MO

B.O.M. 180 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

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ITEM NO.	NO. REQ'D.	DRAWING		PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING		
		NUMBER	REV					KIT	QTY OF PKG'S	PKG. NO.
1					WAVEGUIDE LADDER (WG2)					
2	16	CS00146	2	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	480				
3	40	CS00413	0	CS00413	ANGLE, WAVEGUIDE SUPPORT (15 HOLE)	184				
4	16	CS00037	2	CS00037	PLATE, LADDER SPLICE	6				
5	42	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	23				
6					WAVEGUIDE LADDER HARDWARE (WG2)					
7	20			C40039002	J-BOLT ASSEMBLY, 3/8" Ø X 7 1/4 I.L.	7				
8	22			C40039001	J-BOLT ASSEMBLY, 3/8" Ø X 5 3/4 I.L.	7				
9	115			C40024004	BOLT ASSEMBLY, 3/8" Ø X 1 1/2 GRD 5	12				
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REV	DATE	DRW	CHK	DESCRIPTION	DATE	9/26/18	JOB NO.	414025
					DRAWN BY	DLK	PRINT NO.	BOM-1
					CHECKED BY	ZAK	PAGE	15 OF 20



CUSTOMER : BOONE COUNTY, MO
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ITEM NO.	NO. REQ'D.	DRAWING		PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING		
		NUMBER	REV					KIT	QTY OF PKG'S	PKG. NO.
1					WAVEGUIDE LADDER (WG3)					
2	12	CS00146	2	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	360				
3	30	CS00413	0	CS00413	ANGLE, WAVEGUIDE SUPPORT (15 HOLE)	138				
4	12	CS00037	2	CS00037	PLATE, LADDER SPLICE	5				
5	34	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	19				
6					WAVEGUIDE LADDER HARDWARE (WG3)					
7	20			C40039002	J-BOLT ASSEMBLY, 3/8" Ø X 7 1/4 I.L.	7				
8	14			C40039001	J-BOLT ASSEMBLY, 3/8" Ø X 5 3/4 I.L.	4				
9	85			C40024004	BOLT ASSEMBLY, 3/8" Ø X 1 1/2 GRD 5	9				
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						DATE	<u>9/26/18</u>	JOB NO.	<u>414025</u>	
						DRAWN BY	<u>DLK</u>	PRINT NO.	<u>BOM-1</u>	
						CHECKED BY	<u>ZAK</u>	PAGE	<u>16 OF 20</u>	
REV	DATE	DRW	CHK	DESCRIPTION						



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ITEM NO.	NO. REQ'D.	DRAWING		PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING		
		NUMBER	REV					KIT	QTY OF PKG'S	PKG. NO.
1					FIXED PLATFORM @ 178'					
2	1 KIT			CK00015	ROTATABLE PLATFORM ANGLE KIT	1178				
3	1 KIT			CK00048	ANGLE KIT MIS FRAMING MATL 2 3/8" OD LEG	338				
4	6			C10901210	ANTENNA MTG. PIPE 2 3/8 Ø X 10'-6	239				
5	6	CS00308	0	CS00308	ANGLE, LEG MOUNT 2" Ø	40				
6	12	CS00265	0	CS00265	ANGLE, PIPE MOUNT	37				
7	3	C20137005	0	C20137005	PLATFORM GRATING	169				
8					Z-BRACKET PIPE MOUNTS @ 170'					
9	3 KITS			C10173006	STRAIGHT LEG PIPE MOUNT KIT	205				
10	3			C10981407	ANTENNA MTG. PIPE 4 1/2" X 7'-0"	175				
11	12			C40034032	U-BOLT ASSEMBLY 5/8" Ø X 5 3/16 C-C	26				
12					STIFFARM MOUNTS FOR PIPE MOUNTS @ 170'					
13	3 KITS			C10105020	DISH MOUNT TIEBACK ASSEMBLY	396				
14					Z-BRACKET PIPE MOUNTS @ 160'					
15	3 KITS			C10173011	STRAIGHT LEG PIPE MOUNT KIT	205				
16	3			C10981407	ANTENNA MTG. PIPE 4 1/2" X 7'-0"	175				
17	12			C40034032	U-BOLT ASSEMBLY 5/8" Ø X 5 3/16 C-C	26				
18					STIFFARM MOUNTS FOR PIPE MOUNTS @ 160'					
19	3 KITS			C10105020	DISH MOUNT TIEBACK ASSEMBLY	396				
20										
REV	DATE	DRW	CHK		DESCRIPTION					
						DATE	9/26/18	JOB NO.	414025	
						DRAWN BY	DLK	PRINT NO.	BOM-1	
						CHECKED BY	ZAK	PAGE	17 OF 20	



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		NUMBER	REV							
1					Z-BRACKET PIPE MOUNTS @ 150'					
2	3 KITS			C10173013	STRAIGHT LEG PIPE MOUNT KIT	206				
3	3			C10981407	ANTENNA MTG. PIPE 4 1/2" X 7'-0"	175				
4	12			C40034032	U-BOLT ASSEMBLY 5/8" Ø X 5 3/16 C-C	26				
5					STIFFARM MOUNTS FOR PIPE MOUNTS @ 150'					
6	3 KITS			C10105022	DISH MOUNT TIEBACK ASSEMBLY	397				
7					6' SIDEARM MOUNTS @ 125'					
8	3 KITS			C10151106	6 FT. SIDEARM ASSEMBLY	436				
9	3 KITS			C10900110	PIPE ANTENNA MOUNTING KIT 2 3/8" Ø X 10'-0	105				
10	12			C40034032	U-BOLT ASSEMBLY 5/8" Ø X 5 3/16 C-C	26				
11					Z-BRACKET PIPE MOUNTS FOR SIDEARMS @ 125'					
12	3 KITS			C10174021	TAPERED LEG PIPE MOUNT KIT	191				
13	3			C10981407	ANTENNA MTG. PIPE 4 1/2" X 7'-0"	175				
14	12			C40034032	U-BOLT ASSEMBLY 5/8" Ø X 5 3/16 C-C	26				
15					SWIVEL KNUCKLE TIEBACKS FOR SIDEARMS @ 125'					
16	3 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8"Ø PIPE X 13'-3"	210				
17					6' SIDEARM MOUNTS @ 90'					
18	3 KITS			C10151106	6 FT. SIDEARM ASSEMBLY	436				
19	3 KITS			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" Ø X 5'-0	58				
20	12			C40034032	U-BOLT ASSEMBLY 5/8" Ø X 5 3/16 C-C	26				

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					DRAWN BY	DLK	PRINT NO.	BOM-1
					CHECKED BY	ZAK	PAGE	18 OF 20



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		NUMBER	REV							
1					Z-BRACKET PIPE MOUNTS FOR SIDEARMS @ 90'					
2	3 KITS			C10174029	TAPERED LEG PIPE MOUNT KIT	193				
3	3			C10981407	ANTENNA MTG. PIPE 4 1/2" X 7'-0"	175				
4	12			C40034032	U-BOLT ASSEMBLY 5/8" Ø X 5 3/16 C-C	26				
5					SWIVEL KNUCKLE TIEBACKS FOR SIDEARMS @ 90'					
6	3 KITS			C10179021	SWIVEL KNUCKLE TIEBACK KIT 3 1/2" Ø PIPE X 19'-0"	537				
7					LIGHTNING ROD					
8	1 KIT			C10173006	STRAIGHT LEG PIPE MOUNT KIT	68				
9	1	CW00032	2	CW00032	LIGHTNING ROD EXTENSION 2 7/8" O.D. X 21'-0	128				
10	4			C40034025	U-BOLT ASSEMBLY 5/8" Ø X 3 9/16 C-C	7				
11	1 KIT			C30986003	LIGHTNING ROD ASSY 3/4" Ø X 8'-0" W/STIFFENER	19				
12					HARDWARE					
13	95			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	44				
14	70			C40026022	BOLT ASSEMBLY, 5/8 Ø X 1 3/4 A325	31				
15	15			C40024013	BOLT ASSEMBLY, 3/8" Ø X 3 3/4 GRD 5	3				
16	13			C40034023	U-BOLT ASSEMBLY 5/8" Ø X 3 1/16 C-C	17				
17	13			C40034022	U-BOLT ASSEMBLY 5/8" Ø X 2 11/16 C-C	21				
18	15			C40046001	FENDER WASHER, 3/8" Ø X 1 1/2 X .097	1				
19	15			C40031001	FLATWASHER, 3/8" Ø	1				
20										

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		NUMBER	REV							
1					MISCELLANEOUS					
2	1			C40068001	COLD GALVANIZING SPRAY	1				
3	1	CS00500	0	CS00500	TOWER NAME PLATE	1				
4										
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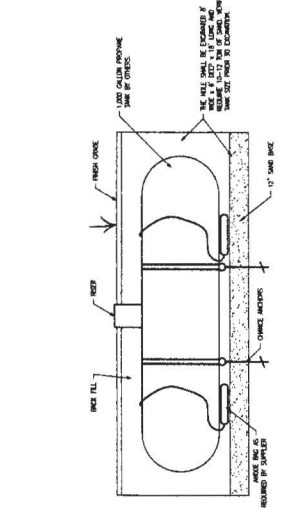
MALICOAT - WINSLOW ENGINEERS, P.C.
 MISSOURI STATE ENGINEERS OF ARCHITECTURAL RECORD
 5649 N. CLEARVIEW ROAD
 COLUMBIA, MISSOURI 65202
 PHONE: MALICOAT, P.C.
 TEL. 571-875-1300
 FAX 571-875-1309

BOGO HALLVILLE FACILITY
 780 E HIGHWAY 124
 HALLVILLE, BOONE COUNTY, MO 65255

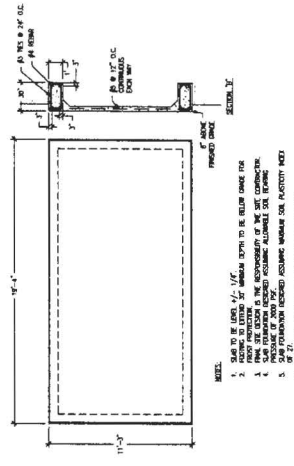
CONTRACTOR SHALL CHECK ALL CONDITIONS AT THE SITE
 DATE: 10-05-18
 PROJECT: 18065
 SHEET: ME2
 MEZ
 MECHANICAL ELECTRICAL DETAILS

GENERAL NOTES:

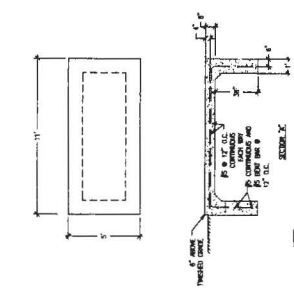
- VERIFY FOUND REQUIREMENTS FOR OWNER'S SPECIFIC EQUIPMENT PRIOR TO ORDER-PL.
- CONDUCTOR INSTALLATION OF EQUIPMENT WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS PRIOR TO ORDER-PL.
- CONTRACTOR SHALL VERIFY THE WORKING OF ANY INTERLOCK AND SHALL STATE ANY PROBLEMS IN A LOGIC, ISLAND, OR EXISTING WELL.
- VERIFY WORKING HEIGHTS AND LOCATIONS WITH OWNER PRIOR TO ORDER-PL.
- ALL CONDUITS TO BE COVERED UNLESS NOTED OTHERWISE.



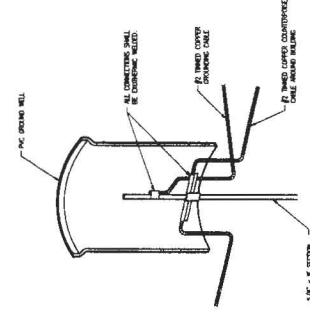
1 FUEL TANK INSTALLATION
 SCALE: NO SCALE



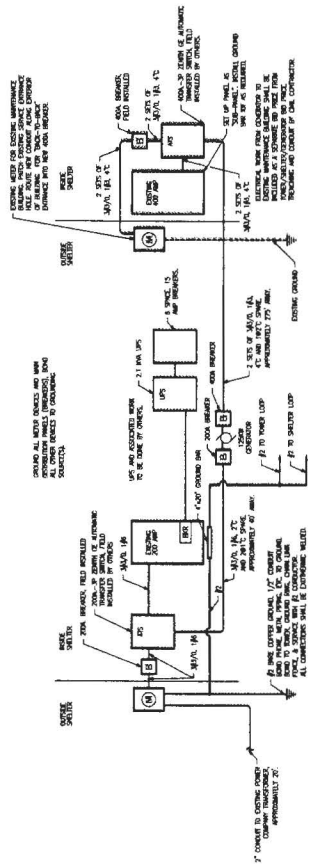
2 FOUNDATION PAD DETAIL
 SCALE: NO SCALE



3 GENERATOR PAD DETAIL
 SCALE: NO SCALE



4 GROUND WELL
 SCALE: NO SCALE



5 ELECTRIC RISER DIAGRAM
 SCALE: NO SCALE